

# Exhibit 28

1 IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF NEW YORK

3 IN RE: ACETAMINOPHEN :  
4 - ASD-ADHD PRODUCTS : MDL NO. 3043  
5 LIABILITY LITIGATION :  
6  
7 THIS DOCUMENT RELATES : CASE NO.  
TO: ALL CASES: : 1:22-md-03043  
-DLC  
: Judge Denise  
1:22-md-03043 : Cote

- CONFIDENTIAL -  
- PURSUANT TO PROTECTIVE ORDER -

September 1, 2023

13 Videotaped deposition of  
14 ALEX KOLEVZON, M.D., taken pursuant to  
15 notice, was held at the Best Western Plus  
16 & Venue, 503 Washington Avenue, Kingston,  
New York, beginning at 8:31 a.m., on the  
above date, before Michelle L. Gray, a  
Registered Professional Reporter,  
Certified Court Reporter, Certified  
Realtime Reporter, and Notary Public.

GOLKOW LITIGATION SERVICES  
877.370.3377 ph | 917.591.5672  
deps@golkow.com

<p>1 APPEARANCES:</p> <p>2</p> <p>3 WATTS GUERRA LLP 4 BY: MIKAL C. WATTS, ESQ. (In person) 5 BY: HAILEY WATTS, ESQ. (In person) 6 BY: SHELLY SANFORD, ESQ. (Zoom) 7 BY: JOHN CRACKIN, ESQ. (Zoom) 8 BY: JERRY WHITE, ESQ. (Zoom) 9 875 East Ashby Place 10 Suite 1200 11 San Antonio, Texas 78257 (210) 447-0500 12 mcwatts@wattsguerra.com hwatts@wattsguerra.com ssanford@wattsguerra.com jwhite@wattsguerra.com 13 Representing the Plaintiffs</p> <p>14 BEASLEY ALLEN LAW FIRM 15 BY: W. ROGER SMITH, III, ESQ. (In person) 16 218 Commerce Street Montgomery, Alabama 36104 (334) 954-7555 17 roger.smith@beasleyallen.com Representing the Plaintiffs</p> <p>18 THE LANIER LAW FIRM 19 BY: CATHERINE HEACOX, ESQ. (Zoom) 20 BY: CRISTINA DELISE, ESQ. (Zoom) 21 10940 West Sam Houston Parkway North Suite 100 22 Houston, Texas 77064 (713) 659-5200 23 catherine.heacox@lanierlawfirm.com cristina.delise@lanierlawfirm.com 24 Representing the Plaintiffs</p>	Page 2	<p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 KELLER POSTMAN LLC 4 BY: ASHLEY BARRIERE, ESQ. (Zoom) 5 BY: AMANDA HUNT, ESQ. (Zoom) 6 BY: ROSEANN ROMANO, ESQ. (Zoom) 7 BY: J. J. SNIDOW, ESQ. (Zoom) 8 BY: REBECCA KING, ESQ. (Zoom) 9 150 North Riverside Plaza Suite 4100 10 Chicago, Illinois 60606 (312) 741-5220 11 ashley.barriere@kellerpostman.com amanda.hunt@kellerpostman.com roseann.romano@kellerpostman.com j.j.snidow@kellerpostman.com 12 Rebecca.king@kellerpostman.com Representing the Plaintiffs</p> <p>13</p> <p>14 HOLWELL, SHUSTER &amp; GOLDBERG, LLP 15 BY: EILEEN MONAGHAN DELUCIA, ESQ. (Zoom) 16 BY: DANIEL SULLIVAN, ESQ. (Zoom) 17 425 Lexington Avenue New York, New York 10017 (646) 837-5151 18 edelucia@hsgllp.com Dsullivan@hsgllp.com 19 Representing the Plaintiffs</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	Page 4
<p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 THE LANIER FIRM 4 BY: EVAN M. JANUSH, ESQ. (Zoom) 5 126 East 56th Street 6th Floor 6 New York, New York 10022 (212) 421-2800 7 evan.janush@lanierlawfirm.com Representing the Plaintiffs</p> <p>8 KRAUSE &amp; KINSMAN LAW FIRM 9 BY: TRICIA CAMPBELL, ESQ. (Zoom) 10 4747 Grand Avenue Suite 300 11 Kansas City, Missouri 64112 (816) 200-9000 12 campbell@krauseandkinsman.com Representing the Plaintiffs</p> <p>13</p> <p>14 TRACEY FOX &amp; WALTERS 15 BY: SEAN P. TRACEY, ESQ. (Zoom) 16 BY: LAWRENCE TRACEY, ESQ. (Zoom) 17 440 Louisiana Street Unit 1901 18 Houston, Texas 77002 (713) 489-6304 19 stracey@traceylawfirm.com tracey@traceylawfirm.com 20 Representing the Plaintiffs</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>	Page 3	<p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 HOLWELL, SHUSTER &amp; GOLDBERG, LLP 4 BY: EILEEN MONAGHAN DELUCIA, ESQ. (Zoom) 5 BY: DANIEL SULLIVAN, ESQ. (Zoom) 6 425 Lexington Avenue New York, New York 10017 (646) 837-5151 7 edelucia@hsgllp.com Dsullivan@hsgllp.com 8 Representing the Plaintiffs</p> <p>9 SKADDEN, ARPS, SLATE, MEAGHER &amp; FLOM LLP 10 BY: ALLISON M. BROWN, ESQ. (In person) 11 BY: JOSEPH A. CARUSO, ESQ. (In person) 12 One Manhattan West New York, New York 10001 (212) 735-3000 13 allison.brown@skadden.com joseph.caruso@skadden.com 14 Representing Johnson &amp; Johnson Consumer Inc. (JJC) 15</p> <p>16 BUTLER SNOW LLP 17 BY: DAVID M. COHEN, ESQ. (Zoom) 18 BY: RAQUEL LUCAS, ESQ. (Zoom) 19 810 Seventh Avenue Suite 1105 New York, New York 10019 20 (646) 606-2996 david.cohen@butlersnow.com raquel.lucas@butlersnow.com 21 Representing Johnson &amp; Johnson Consumer Inc. (JJC) 22</p> <p>23</p> <p>24</p>	Page 5

<p>1 APPEARANCES: (Cont'd.) 2 3 KING &amp; SPALDING LLP 4 BY: LUKE BOSSO, ESQ. (Zoom) 5 1700 Pennsylvania Avenue, NW Suite 900 6 Washington, D.C. 20006 (202) 737-0500 7 <a href="mailto:lbosso@kslaw.com">lbosso@kslaw.com</a> Representing the Defendant, Walmart, 8 Inc., and Wal-Mart Stores, Inc. 9 10 BARNES &amp; THORNBURG LLP BY: NADINE S. KOHANE, ESQ. (Zoom) 11 390 Madison Avenue 12 12th Floor New York, New York 10017 13 (646) 746-2000 14 <a href="mailto:nkohane@btlaw.com">nkohane@btlaw.com</a> Representing CVS Pharmacy, Inc., CVS Health Corporation, Walgreen Co., Walgreens Co., and Walgreens Boots Alliance, Inc. 15 16 BARNES &amp; THORNBURG LLP BY: SANDRA KO, ESQ. (Zoom) 17 BY: DEANNA LEE, ESQ. (Zoom) 18 555 12th Street N.W. Suite 1200 19 Washington, D.C. 20004 (202) 289-1313 20 <a href="mailto:sko@btlaw.com">sko@btlaw.com</a> <a href="mailto:deanna.lee@btlaw.com">deanna.lee@btlaw.com</a> Representing the Defendant, Costco Wholesale Corporation 21 22 23 24</p>	Page 6	<p>1 APPEARANCES: (Cont'd.) 2 3 4 ALSO PRESENT: 5 VIDEOTAPE TECHNICIANS: 6 Henry Marte - Golkow (In person) 7 Danny Ortega - Golkow (In person) 8 9 LITIGATION TECHNICIAN: 10 Erik Thorsnes - U.S. Legal (In person) 11 Jason Short - IT (Zoom) 12 13 14 15 16 17 18 19 20 21 22 23 24</p>
<p>1 APPEARANCES: (Cont'd.) 2 3 STONE DEAN LLP 4 BY: JOSEPH A. LARA, ESQ. (Zoom) 5 21052 Oxnard Street Woodland Hills, California 91367 6 (818) 999-2232 <a href="mailto:jlara@stonedeanolaw.com">jlara@stonedeanolaw.com</a> Representing the Defendant, The Kroger Co. 7 8 MORRISON &amp; FOERSTER LLP 9 BY: LINDSEY HAAS CAIN, ESQ. (Zoom) 10 4200 Republic Plaza 370 Seventeenth Street Denver, Colorado 80202 11 (303) 592-4500 <a href="mailto:lcain@mfo.com">lcain@mfo.com</a> Representing the Defendant, Target Corporation 12 13 14 HAIGHT BROWN &amp; BONESTEEL LLP 15 BY: KATIE TRINH, ESQ. (Zoom) 16 555 South Flower Street, 45th Floor Los Angeles, California 90071 17 (213) 542-8000 <a href="mailto:ktrinh@hbblaw.com">ktrinh@hbblaw.com</a> Representing the Defendant, Big Lots Stores-PNS, LLC 18 19 20 DUANE MORRIS LLP 21 BY: SEAN K. BURKE, ESQ. (Zoom) 22 901 New York Avenue N.W. Suite 700 East Washington, DC 2000 23 (202) 776-5236 <a href="mailto:sburke@duanemorris.com">sburke@duanemorris.com</a> Representing the Defendant, Dollar General Corporation 24</p>	Page 7	<p>1 - - - 2 INDEX 3 - - - 4 5 Testimony of: 6 ALEX KOLEVZON, M.D. 7 By Mr. Watts 35, 617 8 By Ms. Brown 593 9 10 11 12 - - - 13 14 EXHIBITS 15 - - - 16 NO. DESCRIPTION PAGE 17 KOLEVZON 18 No. 400 35 APAP MDL AMENDED DEPOSITION NOTICE ALEX KOLEVZON.PDF 19 20 KOLEVZON 21 No. 401 37 APAP MDL-RESPONSES AND OBJECTIONS TO PLAINTIFFS' NOTICE OF DEPOSITION TO DR. KOLEVZON.PDF 22 23 24</p>

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15	No. 521	389 UNDATED-MOUNT SINAI AWARDED \$25 MILLION TO STUDY THE ENVIRONMENT'S INFLUENCE ON PEOPLE'S HEALTH THROUGHOUT THEIR LIFETIMES-MOUNT SINAI- NEW YORK.PDF		15	No. 545	136 KOLEVZON'S EXPLANATION FOR RISING PREVALENCE RATES OF ASD.PDF (Demonstrative)	
16				16			
17				17	KOLEVZON		
18				18	No. 546	306 BOCCUTO-PHENOTYPE VARIABILITY IN PHelan-McDERMID SYNDROME AND ITS PUTATIVE LINK TO ENVIRONMENTAL FACTORS- PMC.PDF	
19	KOLEVZON			19			
20	No. 522	294 UNDATED_ADVANCES_IN_THE_ GENETICS_OF_AUTISM_ CLIP_1.MP4		20			
21				21			
22	KOLEVZON			22			
23	No. 525	580 UNDATED-KOLEVZON BILLING (KOLEVZON 000102_108.PDF)		23			
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1	- - -		1	- - -			
2	EXHIBITS (Cont'd.)		2	EXHIBITS (Cont'd.)			
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5	NO.	DESCRIPTION	PAGE	5	NO.	DESCRIPTION	PAGE
6	KOLEVZON			6	KOLEVZON		
7	No. 526	336 UNDATED-(20180515)KOLEVZON HUDLESTON DEPO.PDF		7	No. 547	296 20181029-SALDARRIAGA, INCREASED SEVERITY OF FRAGILE X SPECTRUM DISORDERS IN THE AGRICULTURAL COMMUNITY OF RICAURTE COLOMBIA .PDF	
8				8			
9	KOLEVZON			9			
10	No. 528	551 JANSSEN R&D RESEARCH PAYMENTS TO MOUNT SINAI HOSPITAL-OPENPAYMENTS_RESIZE .PDF		10			
11				11			
12	KOLEVZON			12	KOLEVZON		
13	No. 530	54 FEDERAL RULES OF CIVIL PROCEDURE (DECEMBER 1, 2017)		13	No. 548	277 (Chung) MP4	
14				14			
15	KOLEVZON			15	KOLEVZON		
16	No. 532	455 20111100-PINTO-MARTIN, PREVALENCE OF AUTISM SPECTRUM DISORDER IN ADOLESCENTS BORN WEIGHING 2000 GRAMS-PMC.PDF		16	No. 549	263 (Chung) MP4	
17				17	KOLEVZON		
18				18	No. 550	282 (Chung) MP4	
19				19			
20	KOLEVZON			20	KOLEVZON		
21	No. 542	41 UNDATED-E-MAIL RE PUBLICATION DATE OF HOLLANDER BOOK, 2ND EDITION.PDF		21	No. 556	488 HARVARD-20100500-EARLY EXPERIENCES CAN ALTER GENE EXPRESSION AND AF.PDF	
22				22			
23				23			
24				24			

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1	- - -			1
2	EXHIBITS (Cont'd.)			2
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4				4
5	NO.	DESCRIPTION	PAGE	
6	KOLEVZON			
7	No. 557	MT. SINAI-20180110- ACETAMINOPHEN USE DURING PREGNANCY ASSOCIATES WITH ELEVATED RATE OF LANGUAGE DELAY IN GIRLS, MOUNT S.PDF	72	
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11	KOLEVZON			
12	No. 558	JOHNS HOPKINS-20191105- TAKING TYLENOL DURING PREGNANCY ASSOCIATED WITH ELEVATED RISKS FOR AUTISM, ADHD-HUB.PDF	77	
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15	KOLEVZON			
16	No. 559	YALE-20210930-SCIENTIFIC TEAM, INCLUDING YSPH RESEARCHER, WARN AGAINST USE OF ACETAMINOPHEN BY PREGNANT WOMEN-YA.PDF	79	
17				
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19	KOLEVZON			
20	No. 560	HARVARD-20211029-IS A COMMON PAIN RELIEVER SAFE DURING PREGNANCY-HARVARD HEALTHX.560 .PDF	86	
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1	- - -			1
2	EXHIBITS (Cont'd.)			2
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5	NO.	DESCRIPTION	PAGE	
6	KOLEVZON			
7	No. 561	BAUER (CONSENSUS STATEMENT)- 20211200-PARACETAMOL USE DURING PREGNANCY.PDF	93	
8				
9	KOLEVZON			
10	No. 562	20211200-BAUER ET AL- SUPPLEMENTARY TABLES.PDF	94	
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12	KOLEVZON			
13	No. 563	YALE-20220300-YSPH RESEARCH IDENTIFIES PREGNANCY RISKS ASSOCIATED WITH ACETAMINOPHEN USE-YALE SCHOOL OF PUBLIC H.PDF	101	
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16	KOLEVZON			
17	No. 564	MP4	539	
18	KOLEVZON			
19	No. 565	20220630-MT. SINAI-CLINICAL NEUROSCIENCE FELLOWSHIP EXPLORES LINKS BETWEEN PREGNANCY AND AUTISM SPECTRUM DISO.PDF	392	
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22				
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1 - - -  
 2 THE VIDEOGRAPHER: We are  
 3 now on the record.  
 4 My name is Danny Ortega.  
 5 I'm the legal videographer for  
 6 Golkow Litigation Services.  
 7 Today's date is  
 8 September 1st, 2023, and the time  
 9 is 8:31 a.m.  
 10 This video deposition is  
 11 being held at 503 Washington  
 12 Avenue, Kingston, New York, in the  
 13 matter of Tylenol,  
 14 Acetaminophen/Tylenol ASD-ADHD  
 15 products liability litigation MDL.  
 16 The deponent today is Alex  
 17 Kolevzon.  
 18 All counsel will be noted on  
 19 the stenographic record.  
 20 The court reporter today is  
 21 Michelle Gray and will now swear  
 22 in the witness.  
 23 - - -  
 24

Page 34

Page 36

1 Q. Let me put up on the screen  
 2 Exhibit 400. This is the amended notice  
 3 for your deposition.

4 On Page 2 it shows the  
 5 location at the Best Western Plus & Venue  
 6 here in Kingston, New York; is that  
 7 right?

8 A. Yes.

9 Q. And as I understand, we're  
 10 in Kingston, New York, because we're near  
 11 various parties' lake houses in here in  
 12 the Catskills, right?

13 A. Yeah, minus the lake.

14 Q. Minus the lake? Okay.

15 A. No lake.

16 Q. But we're in what's known as  
 17 the Catskills?

18 A. Right.

19 Q. Okay. Great.

20 Attached to that notice is  
 21 what's known as a subpoena duces tecum.  
 22 If we go to Page 7, it asks for documents  
 23 to be produced.

24 Do you see that, sir?

Page 35

Page 37

1 - - -  
 2 ... ALEX KOLEVZON, M.D.,  
 3 having been first duly sworn, was  
 4 examined and testified as follows:  
 5 - - -  
 6 EXAMINATION  
 7 - - -  
 8 BY MR. WATTS:  
 9 Q. What is your name?  
 10 A. Alex Kolevzon.  
 11 Q. You are a medical doctor?  
 12 A. I am.  
 13 Q. Clinical psychiatrist?  
 14 A. I am.  
 15 Q. Okay. I'm here to take your  
 16 deposition because you've been designated  
 17 as an expert witness by the defendants in  
 18 this case.

19 Do you understand that?  
 20 A. Yes.  
 21 (Document marked for  
 22 identification as Exhibit  
 23 Kolevzon 400.)  
 24 BY MR. WATTS:

1 A. Yes.  
 2 Q. And without reading it all  
 3 in, Number 1 asks for a copy of your CV,  
 4 together with a list of papers you've  
 5 written over the last ten years; is that  
 6 right?

7 A. Yes.

8 Q. And if we go to Exhibit 401.  
 9 (Document marked for  
 10 identification as Exhibit  
 11 Kolevzon 401.)

12 BY MR. WATTS:

13 Q. This is the defendants'  
 14 responses. And we can see on Page 3 of  
 15 17 that in response to that Request  
 16 Number 1, the defendants refer us to your  
 17 expert report and Rule 26 disclosures  
 18 dated July 21 of 2023; is that right?

19 A. That's what the response  
 20 says, yes.

21 Q. Okay. And I want to take  
 22 you to that.

23 (Document marked for  
 24 identification as Exhibit

	Page 38	Page 40
1 Kolevzon 405.) 2 BY MR. WATTS: 3 Q. Exhibit 405. 4 Is Exhibit 405, Exhibit 3 to 5 your disclosure, if you go to the second 6 page, your curriculum vitae that was 7 provided to us in this case?		1 Publication Number 120, which is a paper 2 with first author of Levy, and it's dated 3 July 16th of 2023; is that right? 4 A. Yes. 5 Q. So that publication occurred 6 about five days before your disclosure in 7 this case on July the 21st; is that 8 right? 9 A. Yes.
10 MS. BROWN: And, Mr. Watts, 11 if we wanted to give the witness 12 hard copies of what you're pulling 13 up, the numbers correspond to the 14 box? 15 MR. WATTS: They do. 16 MS. BROWN: Okay. 17 MR. WATTS: Everything is 18 premarked. It's 400 through 568, 19 and you're welcome to pull them 20 out. I just figured I'd give you 21 the use of them so we don't have 22 to walk across the room every 23 time. 24 MS. BROWN: Yep.		10 Q. Okay. And right under the 11 publications there's a section dealing 12 with books and chapters in books; is that 13 right? 14 A. Yes. 15 Q. And if we continue from 16 Page 18 to Page 19, Page 20, at the 17 bottom of Page 19, the last book that's 18 listed is one by Shapiro, Gibbs, and 19 yourself, and it's published in 2022; is 20 that right? 21 A. That's the reference. I 22 think it's probably not available yet. 23 Q. Okay. Now I want to go to 24 the Elmo for a second. And if you could,
1 correct copy of the curriculum vitae that 2 was provided to us in this case, together 3 with the Rule 26 disclosure, on July 21, 4 2023?	Page 39	1 tell me whether or not the second edition 2 of the Textbook of Autism Spectrum 3 Disorders, by Hollander, Hagerman and 4 Ferretti is listed under your books and 5 book chapters.
5 A. This is certainly a copy of 6 my CV. I don't know whether it's the 7 most up-to-date version. 8 Q. Well, let me ask you about 9 that. If we go to Page 8 of the CV. 10 MS. BROWN: Here is the CV, 11 405. Is that what you have?		6 A. I don't believe that it is. 7 Q. Okay. And just for 8 references, going back to the presenter, 9 Exhibit 542 is an e-mail to one of my 10 partners by the publisher of this book. 11 (Document marked for 12 identification as Exhibit 13 Kolevzon 542.)
14 BY MR. WATTS: 15 Q. At the bottom, we see a list 16 of publications that are numbered 17 starting with 1 on Page 8; is that right?		14 BY MR. WATTS: 15 Q. 542. 16 (Document marked for 17 identification as Exhibit 18 Kolevzon 494.)
18 Q. And if we go all the way, 19 just flip, Page 8, 9, 10, 11, 12, all the 20 way to 18, we see your publications and 21 the number growing one at a time until we 22 get to Page 18. 23 A. Yes. 24 Q. And it goes through		19 MS. BROWN: We'll just give 20 you a chance to get the hardcopy 21 if you want it, Doctor. 22 MR. WATTS: I don't think 23 he's going to need this one. It's 24 real -- pretty short.

<p style="text-align: right;">Page 42</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Anyway, if this book, second</p> <p>3 edition of the Textbook of Autism</p> <p>4 Spectrum Disorders, it tells us was</p> <p>5 published on March 15th of 2022.</p> <p>6 Do you see that, sir?</p> <p>7 A. Yes.</p> <p>8 Q. If we go to this book, you</p> <p>9 wrote a chapter in this book.</p> <p>10 A. I didn't write a chapter. I</p> <p>11 was a co-author on a chapter.</p> <p>12 Q. Co-author? And if we go to</p> <p>13 Chapter 11, we can see Chapter 11 is</p> <p>14 something entitled "Prenatal, Perinatal,</p> <p>15 and Parental Risk Factors."</p> <p>16 And you are listed as a</p> <p>17 co-author of this book chapter of the</p> <p>18 second edition of the Textbook of Autism</p> <p>19 Spectrum Disorders that was published in</p> <p>20 March of 2022; is that right?</p> <p>21 A. I'm listed as a co-author,</p> <p>22 yes.</p> <p>23 Q. And in the chapter where you</p> <p>24 are a co-author, part of what is written</p>	<p style="text-align: right;">Page 44</p> <p>1 Q. You are listed as a</p> <p>2 co-author on that, right?</p> <p>3 A. Yes. Although I didn't have</p> <p>4 the opportunity to review this before it</p> <p>5 was published.</p> <p>6 Q. And if we can go to</p> <p>7 Page 187. On Page 187, this chapter</p> <p>8 where you are a co-author says, "We</p> <p>9 present plausible biological mechanisms</p> <p>10 linking those risk factors to ASD and</p> <p>11 suggest some directions for future</p> <p>12 research."</p> <p>13 Did I read that correctly?</p> <p>14 A. That's what the person who</p> <p>15 wrote the chapter wrote, yes.</p> <p>16 Q. And that's what's in the</p> <p>17 chapter where you are listed as a</p> <p>18 co-author, right?</p> <p>19 A. Yes. Although I don't agree</p> <p>20 with everything that was written in the</p> <p>21 chapter.</p> <p>22 Q. And if we go to Page 191,</p> <p>23 the chapter where you are a co-author,</p> <p>24 published in March of 2022, has a section</p>
<p style="text-align: right;">Page 43</p> <p>1 is very "strong evidence that</p> <p>2 nonheritable prenatal or perinatal events</p> <p>3 are likely to have an etiological role,"</p> <p>4 and it cites to Bristol in 1996; is that</p> <p>5 right?</p> <p>6 MS. BROWN: Counsel, could</p> <p>7 you zoom in a little bit? It's a</p> <p>8 little hard to see on the screen.</p> <p>9 MR. WATTS: I sure can.</p> <p>10 MS. BROWN: Thank you.</p> <p>11 MR. WATTS: Yeah.</p> <p>12 MS. BROWN: Can you see it?</p> <p>13 THE WITNESS: Yeah.</p> <p>14 MS. BROWN: Okay.</p> <p>15 THE WITNESS: I've read this</p> <p>16 chapter.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. And part of what's written</p> <p>19 in the book chapter that you are a</p> <p>20 co-author of is "only half of the risk is</p> <p>21 explained by genetics"; is that right?</p> <p>22 A. That's what was written by</p> <p>23 the person who wrote the article, the</p> <p>24 chapter.</p>	<p style="text-align: right;">Page 45</p> <p>1 on acetaminophen, does it not?</p> <p>2 A. The author of the chapter</p> <p>3 wrote a section on acetaminophen, yes.</p> <p>4 Q. And the chapter where you</p> <p>5 are a co-author of this book chapter,</p> <p>6 published in March of 2022, says, "One</p> <p>7 analgesic and antipyretic medication</p> <p>8 classified in the B category for safety</p> <p>9 during pregnancy has recently been</p> <p>10 demonstrated to be associated with ASD</p> <p>11 and ADHD."</p> <p>12 Do you see that?</p> <p>13 A. That's what the person who</p> <p>14 wrote the chapter believes, yes.</p> <p>15 Q. And it also says, "It has</p> <p>16 also been suggested that acetaminophen</p> <p>17 increases the risk for ASD by causing</p> <p>18 neuronal oxidative stress"; is that</p> <p>19 right?</p> <p>20 A. Well, I don't believe that</p> <p>21 that's correct, but that person who wrote</p> <p>22 the chapter thinks it was correct.</p> <p>23 Q. And you are listed as a</p> <p>24 co-author in the chapter where that</p>

<p>1 statement exists, right, just last year?</p> <p>2 A. I was listed as a co-author</p> <p>3 as a courtesy because I wrote the</p> <p>4 original chapter from the first edition</p> <p>5 of this textbook.</p> <p>6 Q. Now if we go to Page 192.</p> <p>7 MS. BROWN: What exhibit is</p> <p>8 this, Mr. Watts?</p> <p>9 MR. WATTS: 494. It's the</p> <p>10 one that's in your box.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Page 192 says, "These</p> <p>13 findings suggest that metal toxicant</p> <p>14 update [sic] and essential element</p> <p>15 deficiency during specific developmental</p> <p>16 windows increases ASD risk and severity,</p> <p>17 supporting the hypothesis of systemic</p> <p>18 elemental dysregulation in ASD."</p> <p>19 Is that what's said in here?</p> <p>20 A. So the author of this</p> <p>21 chapter is talking about a hypothetical</p> <p>22 mechanism for increasing the risk, yes.</p> <p>23 Q. But are the words that I</p> <p>24 read in the book chapter where you were</p>	<p>Page 46</p> <p>1 Q. All right. Let's talk about</p> <p>2 the one in Texas.</p> <p>3 A. Okay.</p> <p>4 Q. That was a case where you</p> <p>5 were designated as an expert witness and</p> <p>6 there was an allegation of heavy metal</p> <p>7 ingestion being causative of autism</p> <p>8 spectrum disorder, right?</p> <p>9 A. That was a case where the</p> <p>10 claim was that a child got autism because</p> <p>11 of eating baby food and that the heavy</p> <p>12 metals in the baby food caused him to</p> <p>13 have --</p> <p>14 Q. And did you disclose that</p> <p>15 you were a co-author in this book chapter</p> <p>16 before you went to federal court and</p> <p>17 testified with respect to that subject?</p> <p>18 MS. BROWN: Objection to the</p> <p>19 form.</p> <p>20 You can answer.</p> <p>21 THE WITNESS: As I said, I</p> <p>22 was unaware that I was a co-author</p> <p>23 on this book chapter.</p> <p>24 BY MR. WATTS:</p>
<p>1 listed as a co-author just last year?</p> <p>2 A. You read the words</p> <p>3 correctly.</p> <p>4 Q. Okay. Now, here is my</p> <p>5 question. When is the last time you</p> <p>6 testified as an expert in a lawsuit?</p> <p>7 MS. BROWN: Objection to</p> <p>8 form.</p> <p>9 THE WITNESS: I testified as</p> <p>10 an expert in a lawsuit in the late</p> <p>11 spring, early summer.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. And that was in Beaumont,</p> <p>14 Texas?</p> <p>15 A. No.</p> <p>16 Q. Where was it?</p> <p>17 A. It was --</p> <p>18 Q. Galveston, Texas.</p> <p>19 A. So you're talking about a</p> <p>20 different case --</p> <p>21 Q. Okay.</p> <p>22 A. -- which was in, I think,</p> <p>23 February of 2023. But that wasn't the</p> <p>24 last time I testified.</p>	<p>Page 47</p> <p>1 Q. So you did not disclose it?</p> <p>2 A. There was no -- there'd be</p> <p>3 no way for me to disclose it.</p> <p>4 Q. And if we keep going in this</p> <p>5 book chapter.</p> <p>6 Page 198. There are</p> <p>7 conclusions and future directions, and I</p> <p>8 want to visit with you about what those</p> <p>9 conclusions and those future directions</p> <p>10 are.</p> <p>11 First it says, "A growing</p> <p>12 body of evidence suggests that</p> <p>13 dysregulation within the prenatal</p> <p>14 environment, as well as insults to the</p> <p>15 fetal brain during critical time periods</p> <p>16 of neurodevelopment or during delivery,</p> <p>17 in conjunction with genetic factors, may</p> <p>18 culminate in ASD."</p> <p>19 Is that what's written?</p> <p>20 A. You've read the words</p> <p>21 correctly, yeah.</p> <p>22 Q. And do the words also say,</p> <p>23 "According to current evidence from</p> <p>24 epidemiological studies, several prenatal</p>

<p>1 exposures, parental characteristics, and 2 obstetrical conditions consistently 3 emerge as potential risk factors for 4 ASD."</p> <p>5 Did I read that right?</p> <p>6 A. That is what the author of 7 the chapter wrote, yeah.</p> <p>8 Q. And in the chapter where you 9 were listed as a co-author, published 10 just last year, it says, "Most notably," 11 and then it has a list. You know, in 12 that list is prenatal use of 13 acetaminophen, right?</p> <p>14 A. So among -- what the author 15 is saying, that among the potential risk 16 factors, they are proposing that prenatal 17 use of acetaminophen is one possibility.</p> <p>18 Q. And in the book chapter, 19 which was published last year with your 20 name as a co-author, it says, "In 21 analyses that adjusted for confounding 22 variables, these factors mostly remain 23 considerably robust and statistically 24 significant."</p>	<p>Page 50</p> <p>1 MS. BROWN: Go ahead. You 2 can finish, Doctor.</p> <p>3 THE WITNESS: So just to 4 kind of clarify this whole 5 chapter. There was an initial 6 version of the Textbook of Autism 7 Spectrum Disorders where I was an 8 editor.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. 2011.</p> <p>11 A. 2011. Co-editor along with 12 Dr. Hollander. I wrote this chapter with 13 my colleagues Dr. Gross and 14 Dr. Reichenberg. Subsequently, 15 Dr. Gross, I believe, was invited to 16 submit an updated version of the chapter 17 that he had a student or a research 18 associate write, and they included me as 19 an author as a courtesy because I had 20 written the original paper.</p> <p>21 So there are many things in 22 this chapter that are the opinions of the 23 first author and perhaps other authors 24 but not -- not of me.</p>
<p>1 Did I read that correctly?</p> <p>2 A. You read it. I think the 3 keyword in that sentence is "mostly." 4 But...</p> <p>5 Q. And on Page 199, the chapter 6 ends with something called "Key Points." 7 And it says, "There is strong evidence 8 that nonheritable prenatal, perinatal, 9 and parental events play a role in the 10 etiology of autism spectrum disorder."</p> <p>11 Is that what's written?</p> <p>12 A. That's what's written.</p> <p>13 Q. And that's written at the 14 end of the chapter where Dr. Alexander 15 Kolevzon is listed as a co-author of 16 prenatal, perinatal, and parental risk 17 factors; is that right?</p> <p>18 A. I was listed as a co-author 19 as a courtesy because my --</p> <p>20 Q. And --</p> <p>21 MS. BROWN: Well, let him 22 finish. He's not --</p> <p>22 MR. WATTS: I'm sorry. I 23 was looking down.</p>	<p>Page 51</p> <p>1 Q. So do you make it a practice 2 of allowing your name to be used as a 3 co-author in articles with which you 4 disagree?</p> <p>5 A. Absolutely not. I totally 6 regret this, actually.</p> <p>7 Q. And can you provide the jury 8 with any explanation as to why it is that 9 a CV that had 160 publications and every 10 book chapter that your name has ever been 11 listed on somehow miraculously did not 12 include this book chapter that was 13 published just last year?</p> <p>14 MS. BROWN: I object to the 15 form of the question as 16 argumentative.</p> <p>17 You can answer.</p> <p>18 THE WITNESS: Yeah, if 19 you're implying that I 20 purposefully omitted this chapter 21 from my CV for the purposes of 22 this case, that is factually 23 incorrect.</p> <p>24 The reason that it's not on</p>

<p>1 my CV is because I was not aware  2 of it. And the reason I was not  3 aware of it is because it was a  4 total oversight on my part, that I  5 take responsibility for.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. So let's go to Exhibit 530,  8 please.</p> <p>9 (Document marked for  10 identification as Exhibit  11 Kolevzon 530.)</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Now, the Federal Rules of  14 Civil Procedure -- go to Page 2 --  15 includes a rule called Rule 26, where  16 there is a duty to disclose and required  17 disclosures.</p> <p>18 Do you see that?</p> <p>19 A. Yes.</p> <p>20 Q. And on the next page down in  21 26(a)(2)(B)(iv).</p> <p>22 MR. WATTS: Highlight it,  23 all of that.</p> <p>24 BY MR. WATTS:</p>	<p>Page 54</p> <p>1 you're listed on, right?  2 A. Yeah.</p> <p>3 Q. And with respect to Dr. Raz  4 Gross, this is a medical doctor with whom  5 you hold in the highest regard.</p> <p>6 A. Yes, that's true.</p> <p>7 Q. Dr. Abraham Reichenberg  8 works with you at Mount Sinai, right?</p> <p>9 A. Yes.</p> <p>10 Q. A medical doctor and a  11 researcher that you hold in the highest  12 regard.</p> <p>13 A. Yes.</p> <p>14 Q. Ori Kapra, is that a doctor  15 you respect?</p> <p>16 A. I don't know Ori Kapra.</p> <p>17 Q. Okay. So of the four  18 authors that are listed, yourself,  19 together with Reichenberg and Gross, are  20 three individuals that you would  21 absolutely say know exactly what they are  22 doing from the standpoint of autism  23 research, right?</p> <p>24 MS. BROWN: Object to the</p>
<p>1 Q. It is a list of publications  2 authored in the previous ten years.</p> <p>3 Do you see that?</p> <p>4 You know that's required,  5 right?</p> <p>6 MS. BROWN: I object to this  7 line of questioning showing an  8 expert witness the Federal Rules  9 of Civil Procedure.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Go ahead, sir.</p> <p>12 A. So, unfortunately, with  13 chapters there's no way to  14 cross-reference databases. When you talk  15 about publications that are published  16 online or through peer-review processes,  17 you can search for it, so you can have an  18 inclusive list.</p> <p>19 With chapters you can't have  20 an inclusive list. So I regret that the  21 chapter slipped through, but I can't know  22 something that I was not made aware of.</p> <p>23 Q. Doctor, if we go to your CV,  24 there's all sorts of book chapters that</p>	<p>Page 55</p> <p>1 form.</p> <p>2 You can answer.</p> <p>3 THE WITNESS: Right. Which  4 is why I would trust Dr. Gross and  5 Dr. Reichenberg to put appropriate  6 things in this chapter.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. You know --</p> <p>9 MS. BROWN: Were you done?</p> <p>10 THE WITNESS: Yeah.</p> <p>11 MS. BROWN: Okay.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Dr. Reichenberg is an  14 outstanding scientist in the field of  15 autism spectrum disorder at Mount Sinai,  16 agreed?</p> <p>17 A. I respect Dr. Reichenberg,  18 yes.</p> <p>19 Q. And we can have a situation  20 where outstanding, well-respected medical  21 doctors just disagree; is that right?</p> <p>22 A. I think it depends on the  23 issue.</p> <p>24 Q. Okay. And we'll go through</p>

<p>1 that issue in a little bit.  2        But after this book, that  3 you're listed as a co-author, said what  4 it said with respect to acetaminophen,  5 you had not yet been hired as a defense  6 expert in this case; is that right?  7        A. Correct.  8        Q. You were hired on what date  9 in this case?  10      A. I don't know the exact date.  11      Q. Okay. If I told you the  12 first entry on your billing time records  13 that you provided to us is December 15th  14 of 2022, would you accept that?  15      A. Yes.  16      Q. Okay. Who first called you  17 in this case?  18      A. David Cohen.  19      Q. Okay. And David Cohen  20 with -- is who?  21      A. He's a defense attorney at  22 Butler Snow.  23      Q. Okay. And he called you  24 during the month of November, didn't he?</p>	<p>Page 58</p> <p>1 anymore; is that right?  2        A. I believe the correspondence  3 that I sent to Mr. Tillery was before I  4 spoke to doctor -- Mr. Cohen, but...  5        Q. Okay. If you sent an e-mail  6 to Mr. Tillery on the 14th and your first  7 billing entry in this case is on the 15th  8 of December, would that comport with your  9 recollection?</p> <p>10      MS. BROWN: Objection to the  11 form. Vague.</p> <p>12      THE WITNESS: As I recall, I  13 had asked defense attorneys from  14 another case that I was working on  15 about this acetaminophen case and  16 my discussion with the plaintiffs'  17 attorneys. And at that point I  18 think I had sent an e-mail to  19 Mr. Tillery saying that I had to  20 essentially bow out of trying to  21 be helpful because it represented  22 something of a conflict with  23 another case. Not -- not related  24 to the --</p>
<p>1        A. I think the first  2 conversation was in the month of  3 December.  4        Q. Okay. And after you talked  5 to Mr. Cohen, did you tell him that you  6 were already in discussions with a  7 gentleman by the name of Steve Tillery, a  8 lawyer from Illinois?  9        MS. BROWN: Objection to the  10 form of the question.</p> <p>11      THE WITNESS: The first  12 time --  13      MS. BROWN: Assumes facts.  14      Go ahead.</p> <p>15      THE WITNESS: The first time  16 I spoke to Mr. Cohen, I told him  17 that I had a conversation with  18 Mr. Tillery, yes.</p> <p>19 BY MR. WATTS:</p> <p>20      Q. Okay. And after Mr. Cohen  21 from the Butler Snow law firm, a defense  22 lawyer in this case, contacted you, you  23 then sent correspondence to Mr. Tillery  24 telling him you would not be helping him</p>	<p>Page 59</p> <p>1 BY MR. WATTS:  2        Q. And what was the other case  3 that presented a conflict?  4        A. That was the Hain Celestial  5 case.  6        Q. I'm sorry?  7        A. The Hain Celestial case.  8        Q. Okay. And what did it  9 involve?  10      A. The one that we just  11 discussed, the baby food causing heavy  12 metal poisoning.  13      Q. Okay. And we'll get to that  14 case in a little bit, but -- I showed you  15 Rule 26 not to be argumentative, but you  16 understand that if you're listed as an  17 author on a book chapter, you have a duty  18 to disclose it?</p> <p>19      MS. BROWN: Object. Lacks  20 foundation.</p> <p>21      THE WITNESS: So, as a  22 general rule in terms of like  23 scientific ethics, which is what I  24 abide by, I absolutely disclose</p>

<p>1 everything that I'm aware of.  2 This was an oversight, and I  3 regret it.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Okay. And, again, not  6 beating a dead horse here, but your  7 explanation is that it was an oversight,  8 right?</p> <p>9 MS. BROWN: Objection.  10 Asked and answered.</p> <p>11 THE WITNESS: My explanation  12 is that this was a chapter that  13 was written by somebody else where  14 my name was put on it as a  15 courtesy. And while I was aware  16 that it was being written, I  17 didn't have an opportunity to read  18 it. I didn't know that it was  19 actually being published. I  20 didn't know what textbook it went  21 into.</p> <p>22 And, yes, it was an  23 oversight.</p> <p>24 BY MR. WATTS:</p>	<p>Page 62</p>	<p>1 done or not.</p> <p>2 Q. Okay. You know last night I  3 got an e-mail supplementing your  4 materials considered list as part of the  5 Rule 26 disclosure supplementation,  6 right?</p> <p>7 MS. BROWN: Objection to the  8 form. Lacks foundation.</p> <p>9 THE WITNESS: Yeah, I  10 don't -- I don't know whether you  11 did or not.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. Was there any  14 discussion where you said, oh, that was  15 an oversight, I need to add that to my  16 curriculum vitae to be fair to Mr. Watts  17 and the plaintiffs. They need to know  18 that I'm listed as a co-author on a book  19 chapter that says something diametrically  20 opposed to my position in this case?</p> <p>21 MS. BROWN: I object to the  22 form of the question. Assumes  23 facts. Lacks foundation.</p> <p>24 BY MR. WATTS:</p>	<p>Page 64</p>
<p>1 Q. And so is today the first  2 day that you have seen the book chapter,  3 Exhibit 494, which you were listed a  4 co-author of in the second edition of the  5 Textbook of Autism Spectrum Disorders,  6 published in March of 2022?</p> <p>7 A. No. Defense attorneys had  8 found it and asked me about it, I think,  9 about a month ago, three weeks ago.</p> <p>10 Q. Okay. And a month or three  11 weeks ago when the defense attorneys  12 found it and asked you about it, did you  13 supplement your Rule 26 disclosure so  14 that a plaintiffs' lawyer wanting to talk  15 to you about your publications could know  16 that you were listed as a co-author in  17 Chapter 11 of the Textbook of Autism  18 Spectrum Disorders, Second Edition?</p> <p>19 A. Sorry, you have to repeat  20 the question.</p> <p>21 Q. Sure.</p> <p>22 Did you supplement your  23 Rule 26 disclosure?</p> <p>24 A. I don't know if that was</p>	<p>Page 63</p>	<p>1 Q. Go ahead.</p> <p>2 A. So I think you're  3 mischaracterizing the chapter, first of  4 all. It doesn't totally oppose my  5 opinions. I don't agree with everything  6 that was written in the chapter.</p> <p>7 I think, from my  8 perspective, when I discovered this  9 chapter, I do think it's important to be  10 included now on my CV going forward,  11 absolutely.</p> <p>12 Q. Okay. Fair enough.</p> <p>13 Now, you say you don't agree  14 with everything written in the chapter  15 with your name on it.</p> <p>16 Do you agree that there are  17 other researchers at outstanding medical  18 schools that hold that same position with  19 which you now disagree, right?</p> <p>20 A. Can you be more specific.</p> <p>21 Q. Sure. Let's go through a  22 list of them.</p> <p>23 Are you familiar with a  24 university known as Harvard University?</p>	<p>Page 65</p>

<p>1 A. I am, yes.</p> <p>2 Q. What about Mount Sinai?</p> <p>3 That's where you work, right?</p> <p>4 A. Yes.</p> <p>5 Q. Johns Hopkins?</p> <p>6 A. Yes.</p> <p>7 Q. Is that an outstanding</p> <p>8 medical research university?</p> <p>9 A. I think it's got an</p> <p>10 excellent reputation. I think you have</p> <p>11 to judge research based on the</p> <p>12 researchers.</p> <p>13 Q. Yale, is that a good school?</p> <p>14 A. I'm sure Yale has some good</p> <p>15 schools within it, yes.</p> <p>16 Q. And not subjugating Mount</p> <p>17 Sinai in anyway, but Johns Hopkins,</p> <p>18 Harvard, and Yale are all in the top ten</p> <p>19 medical schools in the United States,</p> <p>20 right?</p> <p>21 A. I think it depends on how</p> <p>22 you define those rankings.</p> <p>23 Q. Sure.</p> <p>24 A. But I'm sure there's</p>	Page 66	<p>1 League jokes later, but I mean, the</p> <p>2 bottom line is, is that you understand</p> <p>3 that there are researchers at your</p> <p>4 medical school, at Harvard, at Yale, and</p> <p>5 Johns Hopkins, who disagree with your</p> <p>6 position in this case?</p> <p>7 MS. BROWN: Objection to the</p> <p>8 form. Assumes facts.</p> <p>9 THE WITNESS: So I think</p> <p>10 that the consensus among the</p> <p>11 scientific community, at least as</p> <p>12 it relates to acetaminophen, is</p> <p>13 that it's not considered to be a</p> <p>14 risk factor and that any of the</p> <p>15 speculation that occurred in this</p> <p>16 chapter was just that,</p> <p>17 speculation.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Have you read the consensus</p> <p>20 statement signed by 91 scientists with</p> <p>21 respect to their concerns about the</p> <p>22 prenatal use of acetaminophen?</p> <p>23 A. I've read the consensus</p> <p>24 statement. I've read various review</p>	Page 68
<p>1 rankings that include them, sure.</p> <p>2 Q. Pretty much every ranking of</p> <p>3 medical school and research facilities</p> <p>4 that exist have Johns Hopkins, Harvard,</p> <p>5 and Yale in the top ten; would you give</p> <p>6 me that?</p> <p>7 A. I think that they are</p> <p>8 outstanding schools with good</p> <p>9 reputations, sure.</p> <p>10 Q. Sure. And, you know, I went</p> <p>11 to a law school, University of Texas,</p> <p>12 that's in the teens, and it bothers them</p> <p>13 greatly they are not in the top</p> <p>14 10 percent.</p> <p>15 Mount Sinai is listed about</p> <p>16 16 to 18, consistently, right?</p> <p>17 A. Yeah. I went to the</p> <p>18 University of Wisconsin, which is in the</p> <p>19 30s.</p> <p>20 Q. And, you know --</p> <p>21 MS. BROWN: You guys are</p> <p>22 both doing great, for the record.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. You and I can tell Ivy</p>	Page 67	<p>1 papers.</p> <p>2 Q. Who is the lead author --</p> <p>3 MS. BROWN: Let him finish.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. I'm sorry. I apologize.</p> <p>6 Who is the lead author of</p> <p>7 the consensus statement?</p> <p>8 A. I believe it's a person</p> <p>9 named Bauer.</p> <p>10 Q. Okay. Do you know</p> <p>11 Dr. Bauer?</p> <p>12 A. I do not.</p> <p>13 Q. Who is the second author</p> <p>14 listed on the consensus statement?</p> <p>15 A. I do not know.</p> <p>16 Q. Do you know a Dr. Swan?</p> <p>17 A. I do.</p> <p>18 Q. And where does Dr. Swan</p> <p>19 work?</p> <p>20 A. She worked at Mount Sinai.</p> <p>21 She is a collaborator of mine.</p> <p>22 Q. Is she an outstanding autism</p> <p>23 research disorder researcher?</p> <p>24 A. I don't think that she would</p>	Page 69

<p>1 consider herself an autism research 2 disorder researcher. 3 Q. Is she a medical doctor? 4 A. I don't think that she is a 5 medical doctor. I think that she is a 6 Ph.D. 7 Q. Ph.D. Okay. 8 So we're still talking -- 9 A. I could be wrong though. 10 Q. Okay. Even if she's only a 11 Ph.D., that's a hell of an 12 accomplishment. We still call her 13 doctor, right? 14 A. Absolutely. 15 Q. Okay. Do you find her to be 16 an outstanding researcher? 17 A. I think that she's a 18 thoughtful scientist. 19 Q. She's not a hack? 20 MS. BROWN: Objection to the 21 form. 22 THE WITNESS: I wouldn't 23 consider Dr. Swan a hack. 24 BY MR. WATTS:</p>	<p>Page 70</p> <p>1 autism. 2 Q. Dr. Wright. What is 3 Dr. Wright's first name, at Mount Sinai? 4 A. Dr. Wright? 5 Q. Yeah. 6 A. How do you spell the last 7 name? 8 Q. W-R-I-G-H-T. 9 A. I'm not familiar with 10 Dr. Wright. 11 Q. Okay. I'll show you some 12 Mount Sinai publications. Maybe it will 13 prompt your recollection. 14 A. Okay. 15 Q. But let's go back to medical 16 schools for a second. 17 MR. WATTS: Exhibit 557, 18 please. 19 (Document marked for 20 identification as Exhibit 21 Kolevzon 557.) 22 BY MR. WATTS: 23 Q. And this is -- just blow up 24 the title for me. It's on Mount Sinai's</p>
<p>1 Q. She's not a quack? 2 MS. BROWN: Objection to the 3 form. 4 THE WITNESS: I wouldn't 5 consider her a quack, either. 6 BY MR. WATTS: 7 Q. I notice that in your report 8 you reference that clown over in England 9 that committed, you know, medical fraud 10 with respect to the vaccines. We're not 11 dealing with people like that when we are 12 talking about Drs. Bauer and Dr. Swan and 13 folks at Harvard and Yale and Johns 14 Hopkins, right? 15 A. Yeah, I don't think I would 16 refer to any -- 17 Q. Okay. 18 A. -- anybody as a clown. But 19 Dr. Swan is a respected scientist. 20 Q. Okay. Dr. Reichenberg, 21 outstanding, respected scientist, right? 22 A. I think that both of these 23 people have a real commitment to trying 24 to understand environmental causes of</p>	<p>Page 71</p> <p>1 website. 2 MR. WATTS: Can you blow up 3 the title first. I'm sorry. 4 MS. BROWN: Oh, wow. 5 BY MR. WATTS: 6 Q. And up at the top you see 7 Mount Sinai? 8 A. Yep. 9 Q. Okay. And it's a Mount 10 Sinai press release from January 10, 11 2018, entitled "Acetaminophen Use During 12 Pregnancy Associated With Elevated Rate 13 of Language Delay in Girls, Mount Sinai 14 Researchers Find." 15 Is that right? 16 A. That's what it says, yes. 17 Q. And in this Mount Sinai 18 press release -- by the way, you were 19 working at Mount Sinai at the time, 20 right? 21 A. Yes. 22 Q. It quotes Dr. Swan. And if 23 you can pull up -- 24 MS. BROWN: And, Counsel, I</p>

<sup>1</sup> don't know what to do to give him  
<sup>2</sup> the opportunity to look at this  
<sup>3</sup> whole thing, because the printed  
<sup>4</sup> copy is super tiny.

<sup>5</sup> MR. WATTS: Yeah. So I  
<sup>6</sup> think that I'm going to have to  
<sup>7</sup> plead guilty to -- I tried to buy  
<sup>8</sup> a high-definition laser printer,  
<sup>9</sup> and they sold me a Canon Inkjet  
<sup>10</sup> that's just a mess.

<sup>11</sup> But he has the ability to  
<sup>12</sup> blow this up, so we'll do that on  
<sup>13</sup> the screen. Not all of them are  
<sup>14</sup> printed like this, but there are a  
<sup>15</sup> few, and I apologize for that.

<sup>16</sup> MS. BROWN: Okay. No  
<sup>17</sup> worries.

<sup>18</sup> Just to the extent that you  
<sup>19</sup> need to -- you're not familiar  
<sup>20</sup> with everything this document  
<sup>21</sup> says, and you need to read it  
<sup>22</sup> before you truthfully answer  
<sup>23</sup> counsel's questions. He's going  
<sup>24</sup> to let you do that.

<sup>1</sup> BY MR. WATTS:

<sup>2</sup> Q. And the only thing I want to  
<sup>3</sup> ask you about is the senior author of  
<sup>4</sup> that study is Shanna Swan, Ph.D., a  
<sup>5</sup> professor of Environmental and Public  
<sup>6</sup> Health at the Icahn School of Medicine;  
<sup>7</sup> is that right?

<sup>8</sup> A. Yes. That's Shanna Swan.

<sup>9</sup> Q. This is a person you  
<sup>10</sup> respect, right?

<sup>11</sup> A. So I can respect her science  
<sup>12</sup> and not agree with her opinions.

<sup>13</sup> Q. I didn't ask you whether you  
<sup>14</sup> agreed with her. I said you respect her  
<sup>15</sup> science, right?

<sup>16</sup> A. I think that she is a good  
<sup>17</sup> scientist.

<sup>18</sup> Q. Okay.

<sup>19</sup> MR. WATTS: Now go back to  
<sup>20</sup> the quote.

<sup>21</sup> BY MR. WATTS:

<sup>22</sup> Q. She says, "Given the  
<sup>23</sup> prevalence of prenatal acetaminophen use  
<sup>24</sup> and the importance of language

<sup>1</sup> development, our findings, if replicated,  
<sup>2</sup> suggest that pregnant women should limit  
<sup>3</sup> their use of this analgesic during  
<sup>4</sup> pregnancy."

<sup>5</sup> That's what Dr. Swan said  
<sup>6</sup> back in 2018; is that right?

<sup>7</sup> MS. BROWN: I object to this  
<sup>8</sup> line of questioning as lacking  
<sup>9</sup> foundation.

<sup>10</sup> Do you need to see the  
<sup>11</sup> entire document to answer these  
<sup>12</sup> questions?

<sup>13</sup> THE WITNESS: So I've read  
<sup>14</sup> this document. I'm familiar with  
<sup>15</sup> Dr. Swan's opinions --

<sup>16</sup> BY MR. WATTS:

<sup>17</sup> Q. And that's what she said.

<sup>18</sup> A. I just disagree with her.

<sup>19</sup> Q. I know, but that's what she  
<sup>20</sup> said, right?

<sup>21</sup> A. So you've read what she said  
<sup>22</sup> from this press release correctly.

<sup>23</sup> Q. Okay. Great.

<sup>24</sup> Now let's go on past Mount

<sup>1</sup> Sinai to Johns Hopkins, Exhibit 558.

<sup>2</sup> (Document marked for  
<sup>3</sup> identification as Exhibit  
<sup>4</sup> Kolevzon 558.)

<sup>5</sup> BY MR. WATTS:

<sup>6</sup> Q. And the title is "Taking  
<sup>7</sup> Tylenol During Pregnancy Associated With  
<sup>8</sup> Elevated Risk For Autism, ADHD."

<sup>9</sup> "A Johns Hopkins study  
<sup>10</sup> analyzing umbilical cord blood samples  
<sup>11</sup> found that newborns with the highest  
<sup>12</sup> exposure to acetaminophen were about  
<sup>13</sup> three times more likely to be diagnosed  
<sup>14</sup> with ADHD and autism spectrum disorder in  
<sup>15</sup> childhood."

<sup>16</sup> Is that the title of this  
<sup>17</sup> document that was published in  
<sup>18</sup> November 5, 2019?

<sup>19</sup> A. So you've correctly read the  
<sup>20</sup> title. If we are going to talk about  
<sup>21</sup> this particular opinion, I'll need to  
<sup>22</sup> look at the actual paper that it's  
<sup>23</sup> referencing.

<sup>24</sup> Q. Okay. Well, let -- I'm just

<p>1 asking about the authors for now.  2 MR. WATTS: Go -- go to the  3 quote from...  4 BY MR. WATTS:  5 Q. Do you know Xiaobin Wang?  6 A. I do not.  7 Q. Okay. Where is the  8 Bloomberg School Department of  9 Population, Family and Reproductive  10 Health? Is that part of Johns Hopkins?  11 A. I understand it to be, yes.  12 Q. He says, "Our study further  13 supports the concerns raised by previous  14 studies- that there is a link between  15 Tylenol use during pregnancy and  16 increased risk of autism and ADHD."  17 Is that what Dr. Wang said?  18 MS. BROWN: Objection to the  19 form. This lacks foundation.  20 THE WITNESS: You're reading  21 quotes from press releases.  22 BY MR. WATTS:  23 Q. And my only question is,  24 with respect to your knowledge, you had</p>	<p>Page 78</p>	<p>1 THE WITNESS: This seems to  2 be a quote from a press release,  3 yes.  4 BY MR. WATTS:  5 Q. Okay.  6 MR. WATTS: And if we could  7 go down to the paragraphs that we  8 highlighted. Just blow those up.  9 BY MR. WATTS:  10 Q. It says, "A team of  11 13 scientists- including one from the  12 Yale School of Public Health- are  13 cautioning against the use of pain  14 relievers with acetaminophen (also known  15 as paracetamol) by pregnant women, citing  16 a growing body of research that suggests  17 the drug might alter fetal development."  18 MR. WATTS: Let me see the  19 next quote.  20 BY MR. WATTS:  21 Q. I want to ask you about this  22 person. Do you know who Zeyan Liew is?  23 A. I've read some of Dr. Liew's  24 papers, yes.</p>	<p>Page 80</p>
<p>1 no information that Dr. Wang is not a  2 highly respected researcher at one of the  3 best medical schools in this country?  4 A. I can't say anything about  5 Dr. Wang. I don't know who he is.  6 Q. Okay. Let's go to Yale.  7 Exhibit 559.  8 (Document marked for  9 identification as Exhibit  10 Kolevzon 559.)  11 BY MR. WATTS:  12 Q. The title at the top says,  13 "Scientific Team, Including YSPH" --  14 that's the Yale School of Public Health,  15 right?  16 A. Mm-hmm.  17 Q. "Scientific Team, Including  18 the Yale School of Public Health  19 Researcher, Warn Against Use of  20 Acetaminophen by Pregnant Women."  21 And that's published on  22 September 30th of 2021; is that right?  23 MS. BROWN: Objection.  24 Lacks foundation.</p>	<p>Page 79</p>	<p>1 Q. Dr. Liew write -- or says,  2 "Our lab was among the first to report a  3 potential harmful effect of acetaminophen  4 on fetal brain development in a large  5 longitudinal human cohort study. It is  6 time to take the growing body of evidence  7 seriously and consider precautionary  8 measures, says Zeyan Liew, Ph.D., M.P.H.,  9 an assistant professor in the Yale School  10 of Public Health Department of  11 Environmental Health Sciences and one of  12 the authors of the statement"; is that  13 right?  14 A. So that's what the quote  15 says; however, if you look at Dr. Liew's  16 paper, I wouldn't necessarily agree with  17 those conclusions.  18 Q. Okay. But let me ask you,  19 Dr. Liew is a respected researcher at the  20 Yale School of Public Health, one of the  21 best medical schools this country has to  22 offer, right?  23 A. I don't know Dr. Liew. I  24 can't comment on his respectability.</p>	<p>Page 81</p>

<p>1 Q. And so you have no negative 2 view of his respectability, acquiring 3 that position at one of the nation's 4 finest medical schools?</p> <p>5 A. I have no positive or 6 negative view.</p> <p>7 Q. Okay.</p> <p>8 A. I do have a view on the 9 results of his paper, however.</p> <p>10 MR. WATTS: Let's go to the 11 next paragraph.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. It says, "The Yale School of 14 Public Health has previously contributed 15 to published research that raises 16 questions about the drug's safety. This 17 research includes a series of 18 epidemiological studies that linked 19 pregnancy intake of acetaminophen with an 20 increased risk for attention deficit 21 hyperactivity disorders, or ADHD, as well 22 as impaired cognitive and executive 23 function when analyzing detailed 24 pregnancy medication intake. Data in a</p>	<p>Page 82</p> <p>1 with certainty.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Okay. You are aware that 4 through technology, whether it be AI or 5 databases, we can load in everything 6 you've ever done and do Boolean searches 7 to look for words, right?</p> <p>8 A. Yeah.</p> <p>9 MS. BROWN: Objection.</p> <p>10 Lacks foundation.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Can you tell us whether the 13 word "acetaminophen" shows up in any 14 publication you ever did before this 15 lawyer from Butler Snow called you and 16 asked you to be an expert in this case?</p> <p>17 MS. BROWN: I object on 18 multiple grounds, including that 19 it lacks foundation and it's 20 argumentative.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Go ahead.</p> <p>23 A. So I think I answered the 24 question, which is that I cannot be</p>
<p>1 "Dutch" -- "in a Danish longitudinal 2 cohort included more than 60,000 mothers 3 and children."</p> <p>4 Were you involved in the 5 research that was done by those 6 13 researchers, including this gentleman 7 from the Yale School of Public Health?</p> <p>8 A. So my research focused -- 9 and my role, I think, in this case, is as 10 an autism researcher and an autism 11 expert. And this is not about autism.</p> <p>12 Q. So let's add -- let's take 13 out the book chapter that wasn't listed 14 in your CV.</p> <p>15 If you could assume, and you 16 should, that I've read everything you've 17 ever written, does the word 18 "acetaminophen" show up a single time in 19 any of the research or any of the 20 publications that you did prior to being 21 hired in this case?</p> <p>22 MS. BROWN: Objection to the 23 speech.</p> <p>24 THE WITNESS: I can't say</p>	<p>Page 83</p> <p>1 certain. If you want me to speculate...</p> <p>2 Q. Let's go with your 3 recollection --</p> <p>4 MS. BROWN: Let's let him 5 finish, though.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Oh, I thought you were done. 8 I apologize.</p> <p>9 A. And so I think it's 10 unlikely.</p> <p>11 Q. Okay.</p> <p>12 A. I have not considered 13 acetaminophen to be a significant risk 14 factor in autism, and I hadn't looked 15 deeply into literature. When I had an 16 opportunity to actually investigate the 17 literature, it became pretty clear to me 18 that it should not be considered a 19 significant risk factor.</p> <p>20 MR. WATTS: Okay.</p> <p>21 Objection. Nonresponsive.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Here is my question. 24 Can you, by way of</p>
	Page 84

Page 86  
 1 recollection, point me to any publication  
 2 that you had ever published before being  
 3 hired as an expert in this case that even  
 4 referenced acetaminophen?

5 MS. BROWN: Objection.  
 6 Asked and answered.

7 You can answer again.

8 THE WITNESS: By way of  
 9 recollection, right this minute,  
 10 no, I cannot.

11 BY MR. WATTS:

12 Q. Okay. Fair enough.

13 MR. WATTS: Let's go to  
 14 Harvard, Exhibit 560.

15 (Document marked for  
 16 identification as Exhibit  
 17 Kolevzon 560.)

18 BY MR. WATTS:

19 Q. "Is a common pain reliever  
 20 safe during pregnancy?"

21 Do you see that, sir?

22 A. I see what's written, yes.

23 MR. WATTS: And if we can go  
 24 to the fourth page.

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 1 BY MR. WATTS:

2 Q. It says, "Sensible steps if  
 3 you're pregnant."

4 MS. BROWN: And, Counsel,  
 5 can he have a moment to take a  
 6 look at this? This one is printed  
 7 in a readable format.

8 BY MR. WATTS:

9 Q. So the questions I'm going  
 10 to ask you are on Page 4, about sensible  
 11 steps.

12 MS. BROWN: But if he's  
 13 never seen it before, let's give  
 14 him a minute to review it so he  
 15 can answer your questions.

16 MR. WATTS: I'm just  
 17 pointing him to where we're going.

18 BY MR. WATTS:

19 Q. All right. Do you know  
 20 Dr. Kathryn Rexrode at Harvard?

21 A. No.

22 Q. I'm sorry?

23 A. No.

24 Q. Okay. So you don't have any

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 1 testimony that she's anything other than  
 2 an outstanding researcher --  
 3 MS. BROWN: Objection to the  
 4 form.

5 MR. WATTS: Excuse me, I'm  
 6 not done with my question. Let  
 7 me -- let me ask the question and  
 8 finish it and then you can object.

9 BY MR. WATTS:

10 Q. You don't have any  
 11 information that Dr. Rexrode is anything  
 12 but an outstanding researcher at one of  
 13 the finest medical schools in this  
 14 country, the Harvard-affiliated Brigham  
 15 and Women's Hospital, right?

16 MS. BROWN: Objection to the  
 17 form. Lacks foundation.

18 THE WITNESS: Yeah. I mean,  
 19 I don't know why you're asking me  
 20 about Dr. Rexrode. How is that  
 21 relevant to this particular --

22 BY MR. WATTS:

23 Q. Well, it's relevant because  
 24 I ask the questions and you have to

Page 89  
 1 answer them, and the judge can decide  
 2 whether it's relevant.

3 A. Okay.

4 Q. And my question is, you know  
 5 that Harvard is affiliated with Brigham  
 6 and Women's Hospital, right?

7 A. Yes.

8 Q. It's one of the outstanding  
 9 medical schools in this country?

10 A. It's got an excellent  
 11 reputation.

12 Q. Okay. And in terms of this  
 13 publication, the Harvard Health  
 14 Publishing, it says, "Sensible steps if  
 15 you are pregnant."

16 And the first step is,

17 "Avoid acetaminophen during pregnancy  
 18 when possible"; is that right?

19 MS. BROWN: Objection to the  
 20 form. Lacks foundation.

21 THE WITNESS: Again, that's  
 22 what's written here, but --

23 BY MR. WATTS:

24 Q. This says that --

<p>1 MS. BROWN: Let him finish, 2 please, Counsel.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Is that what's written here?</p> <p>5 A. So that this is a press 6 release of sorts from a non-peer-reviewed 7 website, I imagine. And right before it 8 talks about sensible steps, it talks 9 about "more research is needed."</p> <p>10 So I agree with you that 11 there are these things that are written. 12 The question is what's the basis for 13 them.</p> <p>14 MR. WATTS: Okay.</p> <p>15 Objection. Nonresponsive.</p> <p>16 MR. WATTS:</p> <p>17 Q. Under, "Sensible steps if 18 you're pregnant," does it say, "Avoid 19 acetaminophen during pregnancy when 20 possible"?</p> <p>21 A. So it's not clear on what 22 basis this person is making this 23 suggestion.</p> <p>24 Q. I didn't ask you that.</p>	<p>Page 90</p> <p>1 Q. And -- 2 MS. BROWN: Wait. Please 3 let him finish.</p> <p>4 THE WITNESS: -- and I don't 5 know what basis she's making this 6 opinion.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. And at the bottom it says, 9 "Minimize use. If you do need to take 10 acetaminophen during pregnancy, take it 11 for the shortest amount of time possible 12 at the lowest effective dose to reduce 13 fetal exposure. 'This advice about the 14 lowest necessary dose for the shortest 15 period of time is generally good 16 counseling for all over-the-counter 17 medication use, especially during 18 pregnancy,' says Dr. Rexrode."</p> <p>19 Is that the words on the 20 paper?</p> <p>21 A. Those are the words on the 22 paper.</p> <p>23 Q. Okay. Now let's go to 24 Exhibit 561.</p>
<p>1 MS. BROWN: Wait. Let him 2 finish, please, Counsel.</p> <p>3 THE WITNESS: Those are -- 4 those are the words on the page.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Okay. It also says, "Its 7 use should be limited to situations where 8 it's really needed," says Dr. Rexrode, 9 right?</p> <p>10 Are those words on the page?</p> <p>11 A. It says, "Dr. Rexrode has 12 warned patients against using NSAID 13 drugs, such as Advil and Aleve, and 14 suggested taking acetaminophen instead."</p> <p>15 Q. And, keep going.</p> <p>16 A. "Now I'll also tell you 17 [sic] that some people -- have -- some 18 concerns have been raised about 19 acetaminophen use during pregnancy."</p> <p>20 Q. "And explain that its use 21 should be limited to situations where 22 it's really needed," right?</p> <p>23 A. This is what Dr. Rexrode, 24 who I don't know who she is --</p>	<p>Page 91</p> <p>1 (Document marked for 2 identification as Exhibit 3 Kolevzon 561.)</p> <p>4 BY MR. WATTS:</p> <p>5 Q. And this is the so-called 6 consensus statement; is that right?</p> <p>7 MS. BROWN: Hang on. I'm 8 going to give him the hardcopy so 9 he can have a minute to --</p> <p>10 MR. WATTS: Sure.</p> <p>11 MS. BROWN: -- refamiliarize 12 himself before you ask the 13 questions.</p> <p>14 MR. WATTS: 561.</p> <p>15 MS. BROWN: We got it.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Is this the one where 18 Dr. Bauer is the first author and Shanna 19 Swan is second?</p> <p>20 A. Yes.</p> <p>21 Q. And in the abstract does it 22 say, "We recommend that pregnant women 23 should be cautioned at the beginning of 24 pregnancy to," and it says, "forego APAP</p>

<p>1 unless it is medically indicated; consult  2 with a physician or pharmacist if they  3 are uncertain whether its use is  4 indicated and before using on a long-term  5 basis; and minimize exposure by using the  6 lowest effective dose for the shortest  7 possible time."</p> <p>8 Is that what it says?</p> <p>9 A. I think this group of  10 authors is providing their opinion on the  11 use of acetaminophen and urging caution.</p> <p>12 Q. And is that what it says?</p> <p>13 A. It's what it says.</p> <p>14 Q. Okay.</p> <p>15 A. But I don't think that's  16 commonly accepted in the scientific  17 community.</p> <p>18 Q. Now, let's talk about that  19 for a second.</p> <p>20 MR. WATTS: Go to  21 Exhibit 562.</p> <p>22 (Document marked for  23 identification as Exhibit  24 Kolevzon 562.)</p>	<p>Page 94</p> <p>1 reputations?</p> <p>2 MS. BROWN: Objection.</p> <p>3 THE WITNESS: No.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Okay. Let's go to Page 2,  6 the supplementary box, the signatories.</p> <p>7 Do you see, beginning on  8 Number 1 -- we can flip through the  9 pages, and it will go from 1 to 91 -- as  10 we go to Page 2, Page 3, Page 4. Stop at  11 Page 5.</p> <p>12 And it keeps going to 91,  13 but let me ask you about Number 41.</p> <p>14 Do you know who Martha  15 Herbert is?</p> <p>16 A. 41.</p> <p>17 MS. BROWN: Just a minute  18 while he gets there.</p> <p>19 THE WITNESS: Martha  20 Herbert?</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Herbert? I'm sorry.</p> <p>23 A. I do not.</p> <p>24 Q. Is Massachusetts General</p>
<p>1 BY MR. WATTS:</p> <p>2 Q. And this is a supplementary  3 information to the consensus statement.  4 It's entitled "Paracetamol Use During  5 Pregnancy: A Call for Precautionary  6 Action."</p> <p>7 Do you see that?</p> <p>8 MS. BROWN: Hang on a  9 second. I don't -- I just want to  10 get us the hardcopy, and I don't  11 see it.</p> <p>12 Here we go.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Have you gone through and  15 studied these 91 doctors that signed off  16 on the consensus statement?</p> <p>17 MS. BROWN: Objection.</p> <p>18 Vague.</p> <p>19 THE WITNESS: Can you  20 clarify the question.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Sure.</p> <p>23 Did -- did you go through  24 and check who they are, see their</p>	<p>Page 95</p> <p>1 Hospital an outstanding medical facility  2 in this country?</p> <p>3 A. MGH has a good reputation,  4 yes.</p> <p>5 Q. Stephen Schultz, do you know  6 Stephen Schultz, Number 42?</p> <p>7 A. I don't believe I know  8 Stephen Schultz, no.</p> <p>9 Q. Now, I don't want to get  10 crossways with you, but this is a  11 gentleman at the University of Texas  12 Health Science Center in San Antonio,  13 Texas, and we are pretty proud of him.</p> <p>14 Do you know him?</p> <p>15 A. This is Dr. Schultz again?</p> <p>16 Q. Yeah.</p> <p>17 A. No, I still don't know him.</p> <p>18 Q. Dang.</p> <p>19 A. Sorry.</p> <p>20 Q. Okay. How about Number 48.</p> <p>21 Do you know Dr. Ritz at UCLA?</p> <p>22 A. No.</p> <p>23 Q. Is UCLA considered one of  24 the top medical facilities in this</p>

<p>1 country?</p> <p>2 A. UCLA has some excellent</p> <p>3 programs, yes.</p> <p>4 Q. Okay. Let's go to 57.</p> <p>5 A. Yeah.</p> <p>6 Q. Do you know Dr. Bergink?</p> <p>7 A. I do.</p> <p>8 Q. She's one of your colleagues</p> <p>9 at Mount Sinai, right?</p> <p>10 A. She is.</p> <p>11 Q. Dr. -- Number 80, Shanna</p> <p>12 Swan?</p> <p>13 A. I know Dr. Swan, yes.</p> <p>14 Q. One of your colleagues at</p> <p>15 Mount Sinai, right?</p> <p>16 A. She works at Mount Sinai,</p> <p>17 yes.</p> <p>18 Q. And then if we go to 82,</p> <p>19 we've got Dr. Liew at Yale and Dr. Hugh</p> <p>20 Taylor. Do you know Dr. Taylor at Yale?</p> <p>21 A. I don't know either one of</p> <p>22 these personally.</p> <p>23 Q. Okay. What about Number 91,</p> <p>24 Dr. David Møbjerg Kristensen?</p>	Page 98	<p>1 A. Yep. There are studies</p> <p>2 listed here. That's correct.</p> <p>3 Q. Now, if we go to Page 32,</p> <p>4 there's a "Supplementary Table 4:</p> <p>5 Neurotoxicity Experimental Studies"; is</p> <p>6 that right?</p> <p>7 MS. BROWN: Hang on just a</p> <p>8 sec while he gets there.</p> <p>9 THE WITNESS: These look to</p> <p>10 be model studies, animals, yeah.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. If we go to Page 37,</p> <p>13 Supplementary Table 5 lists review</p> <p>14 articles, right?</p> <p>15 A. Sorry, which page?</p> <p>16 Q. Page 37.</p> <p>17 A. There are some review</p> <p>18 articles in this table, yes.</p> <p>19 Q. And if you go to Page 50,</p> <p>20 they begin the inclusion of references.</p> <p>21 In between 50 and 61, there are</p> <p>22 121 different references that they cite</p> <p>23 to; is that right?</p> <p>24 A. There appear to be</p>	Page 100
<p>1 A. I don't know Dr. Kristensen</p> <p>2 personally, no.</p> <p>3 Q. Has he taught at Icahn on an</p> <p>4 adjunct professor basis, do you know?</p> <p>5 MS. BROWN: Objection to the</p> <p>6 form. Lacks foundation.</p> <p>7 THE WITNESS: He may or may</p> <p>8 not have. I am not aware.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay. And if we go to</p> <p>11 Page 12, "Supplementary Table 1:</p> <p>12 Reproductive [sic] Epidemiology."</p> <p>13 They list the epidemiology,</p> <p>14 right?</p> <p>15 A. Page 11, yeah.</p> <p>16 Q. Supplementary Table 2 on</p> <p>17 Page 14. They list "Reproduction</p> <p>18 Experimental Studies," right?</p> <p>19 A. That's what Table 2 says,</p> <p>20 yes.</p> <p>21 Q. Page 20, Supplemental</p> <p>22 Table 3, they list "Neurodevelopmental</p> <p>23 Epidemiological" -- or "Epidemiology</p> <p>24 Cohort Studies," right?</p>	Page 99	<p>1 121 references.</p> <p>2 Q. Now, let me go back to Yale</p> <p>3 for a second, Exhibit 563.</p> <p>4 (Document marked for</p> <p>5 identification as Exhibit</p> <p>6 Kolevzon 563.)</p> <p>7 BY MR. WATTS:</p> <p>8 Q. This is dated the spring of</p> <p>9 2022. Came out about the same time as</p> <p>10 your book chapter.</p> <p>11 "Yale School of Public</p> <p>12 Health Research Identifies Pregnancy</p> <p>13 Risks Associated With Acetaminophen Use."</p> <p>14 MS. BROWN: Sorry, what --</p> <p>15 what exhibit is this?</p> <p>16 MR. WATTS: 563.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Did you see this when it</p> <p>19 came out?</p> <p>20 MS. BROWN: Hang on a second</p> <p>21 while we find it.</p> <p>22 Did we mark this already?</p> <p>23 MR. WATTS: Nope.</p> <p>24 MS. BROWN: Okay.</p>	Page 101

<p>1 BY MR. WATTS:</p> <p>2 Q. Do you recall seeing this</p> <p>3 when it came out?</p> <p>4 A. I just need to look at the</p> <p>5 article.</p> <p>6 MS. BROWN: Just -- just a</p> <p>7 second. I'll give it to him.</p> <p>8 It's a little bit hard to read.</p> <p>9 Mr. Watts can probably put</p> <p>10 it up on the Elmo if you need it</p> <p>11 expanded --</p> <p>12 THE WITNESS: I just want</p> <p>13 to -- want to see what article</p> <p>14 they are referencing.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. What I want to ask you about</p> <p>17 is the third paragraph from the bottom.</p> <p>18 It says, "In another study."</p> <p>19 MS. BROWN: But, Counsel,</p> <p>20 just because he's never seen this</p> <p>21 before --</p> <p>22 MR. WATTS: I know. I know.</p> <p>23 MS. BROWN: -- if we can</p> <p>24 just give him a minute to</p>	Page 102	<p>1 acetaminophen for six days, Furnary found</p> <p>2 that acetaminophen to elicit the same</p> <p>3 gene expression patterns and metabolic</p> <p>4 behaviors in the cultures as those known</p> <p>5 to be associated with autism spectrum</p> <p>6 disorder."</p> <p>7 Do you see that, sir?</p> <p>8 A. Yeah, I see that.</p> <p>9 Q. Here's my question:</p> <p>10 Can you tell the ladies and</p> <p>11 gentlemen of the jury what the phrase</p> <p>12 "gene expression" means to you?</p> <p>13 A. So gene expression is,</p> <p>14 essentially, whether the proteins that</p> <p>15 are translated from the DNA are</p> <p>16 upregulated or downregulated.</p> <p>17 Q. Okay. And when this says</p> <p>18 that "the same gene expression patterns</p> <p>19 and metabolic behaviors in the cultures</p> <p>20 of acetaminophen were those known to be</p> <p>21 associated with autism spectrum</p> <p>22 disorder," have you seen this work?</p> <p>23 MS. BROWN: Objection to</p> <p>24 form. Vague.</p>
<p>1 familiarize --</p> <p>2 BY MR. WATTS:</p> <p>3 Q. I know. I'm just pointing</p> <p>4 you to where I want to ask you about.</p> <p>5 MS. BROWN: Thanks.</p> <p>6 MR. WATTS: Just blow up "In</p> <p>7 another study," if you would.</p> <p>8 MS. BROWN: Well, give him a</p> <p>9 second to read this.</p> <p>10 THE WITNESS: Okay.</p> <p>11 MR. WATTS: Now blow up that</p> <p>12 article. "In another study."</p> <p>13 There you go.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. All right. Here is my</p> <p>16 question.</p> <p>17 It references another study</p> <p>18 where a Yale student "used human</p> <p>19 pluripotent stem cells, RNA sequencing,</p> <p>20 and metabolomics to identify cellular</p> <p>21 mechanisms that may be involved in the</p> <p>22 development of autism spectrum disorder.</p> <p>23 After exposing the stem cells in culture</p> <p>24 to clinically relevant doses of</p>	Page 103	<p>1 You can answer if you</p> <p>2 understand.</p> <p>3 THE WITNESS: That's the --</p> <p>4 that's the end of the question?</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Yeah.</p> <p>7 A. Oh.</p> <p>8 So I'm not sure I feel</p> <p>9 comfortable commenting on the study</p> <p>10 without looking at the actual study. So</p> <p>11 this is just an excerpt.</p> <p>12 Q. Does this ring a bell to you</p> <p>13 at all as something that you recall</p> <p>14 looking at?</p> <p>15 A. I'm not sure I understand</p> <p>16 the question.</p> <p>17 Q. Sure.</p> <p>18 This -- this gene expression</p> <p>19 work that was done at Yale, does it ring</p> <p>20 a bell?</p> <p>21 A. As it relates to what</p> <p>22 specifically?</p> <p>23 Q. Acetaminophen and autism</p> <p>24 spectrum disorder.</p>

<p>1 MS. BROWN: Objection to the 2 form.</p> <p>3 THE WITNESS: So I'm aware 4 of studies that have looked at 5 proxies for gene expression.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Okay. Now, have you done 8 any studies that used proxies of gene 9 expression to compare what the gene 10 expression patterns were for 11 acetaminophen versus what you see in 12 autism spectrum disorder?</p> <p>13 A. I myself do not do gene 14 expression studies.</p> <p>15 Q. Fair enough. All right.</p> <p>16 MR. WATTS: Let's go to 17 Exhibit 403.</p> <p>18 (Document marked for 19 identification as Exhibit 20 Kolevzon 403.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. And this is your report.</p> <p>23 You're probably going to need it most of 24 the rest of the day, so just kind of --</p>	<p>Page 106</p> <p>1 top of the report, yes.</p> <p>2 Q. Now, if you could, you see 3 the file number that says Page 2 of 94, 4 and then it goes up one per page?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. Go to Page 9 of 94 7 for a second.</p> <p>8 MR. WATTS: Now, if you 9 would blow up the first five 10 lines, Erik, of III (a)?</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now, you described autism 13 disorder first being described by Leo 14 Kanner in 1943.</p> <p>15 Second paragraph, you said, 16 "The prevalence of ASD has increased 17 dramatically over the past five decades 18 in the United States"; is that right?</p> <p>19 A. That's what it says, yes.</p> <p>20 Q. All right. Now, I want to 21 talk to you about prevalence in some 22 detail for a little bit.</p> <p>23 Between 1997 and 2007, do 24 the prevalence rates of autism increase</p>
<p>1 don't put this one up.</p> <p>2 A. Okay.</p> <p>3 Q. Is Exhibit 403 a true and 4 correct copy of the expert report that 5 you provided in this case?</p> <p>6 MS. BROWN: And just at 7 least take a moment to flip 8 through it, please.</p> <p>9 THE WITNESS: Yeah, it looks 10 to be.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now, you've also gave a 13 report in a case called Daniels-Feasel; 14 is that right?</p> <p>15 A. Yes.</p> <p>16 Q. And that's Exhibit 479. If 17 you could pull that one out as well.</p> <p>18 (Document marked for 19 identification as Exhibit 20 Kolevzon 479.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Is the date of this report 23 November 8th of 2018?</p> <p>24 A. That's what it says on the</p>	<p>Page 107</p> <p>1 in the United States?</p> <p>2 A. The prevalence increased.</p> <p>3 I'm not sure the incidence did.</p> <p>4 Q. I'm asking about prevalence 5 rates right now, okay?</p> <p>6 A. So according to 7 prevalence-based studies, depending on 8 the methods, most rates increased.</p> <p>9 Q. And let me show you 10 Exhibit 414 where you've said this, just 11 real briefly.</p> <p>12 (Document marked for 13 identification as Exhibit 14 Kolevzon 414.)</p> <p>15 BY MR. WATTS:</p> <p>16 Q. And we'll talk about 17 prevalence versus incidence here in a 18 second.</p> <p>19 Did you write an article in 20 2007 entitled, "Prenatal and Perinatal 21 Risk Factors for Autism: A review and 22 integration of findings," with Dr. Gross 23 and Dr. Reichenberg?</p> <p>24 A. I did.</p>

1 Q. And on Page 326 there's a  
 2 sentence in there that says, "Prevalence  
 3 rates of both autism and autism spectrum  
 4 disorders (ASDs) may have increased  
 5 markedly in the past decade"; is that  
 6 right?

7 MS. BROWN: Can we give him  
 8 a second to find the page. Page 3  
 9 of the article.

10 MR. WATTS: No, I said  
 11 Page 326, which is the first page.

12 THE WITNESS: Are you  
 13 referring to the abstract or  
 14 the --

15 MS. BROWN: Right here.

16 THE WITNESS: Ah, okay.  
 17 That's convenient.

18 Yes, I think it's inarguable  
 19 that prevalence rates have  
 20 increased.

21 BY MR. WATTS:

22 Q. Okay. And then in the next  
 23 column it says, "Although this increase  
 24 may be artifactual to some degree, it may

1 also reflect a true increase in the  
 2 incidence of ASD and implicates an  
 3 important role of environmental causes."

4 Did I read that correctly?

5 A. You read it correctly. And  
 6 it reflects the idea that there are some  
 7 nonheritable causes and that they're  
 8 important to try to identify.

9 Q. And I think your point is  
 10 that if you have this dramatic increase  
 11 of autism spectrum disorder cases, our  
 12 genes don't change that fact. So if  
 13 there is, in fact, a true increase, it  
 14 has to be explained by something other  
 15 than genetics; is that right?

16 MS. BROWN: Objection.  
 17 Lacks foundation.

18 THE WITNESS: So my opinion  
 19 about the true increase and  
 20 prevalence relates more to other  
 21 factors, like changing diagnostic  
 22 criteria, younger age of  
 23 diagnosis --

24 BY MR. WATTS:

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1 Q. And what I'm --  
 2 MS. BROWN: Let him finish.  
 3 Let him finish.

4 BY MR. WATTS:

5 Q. Yeah, go ahead.  
 6 MR. WATTS: We're going to  
 7 get to those.

8 MS. BROWN: I know. But let  
 9 him at least answer your question  
 10 and then you can follow up.

11 Go ahead.

12 THE WITNESS: You had said  
 13 that -- something to the effect of  
 14 because there's an increase in  
 15 prevalence, that must mean  
 16 environmental factors, and I don't  
 17 think that that's true --

18 BY MR. WATTS:

19 Q. I actually said --  
 20 MS. BROWN: Wait. Wait.  
 21 Please, Mr. Watts, let him finish.

22 MR. WATTS: I'm sorry.  
 23 MS. BROWN: Go ahead, sir.  
 24 MR. WATTS: I actually said,

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1 "If there is a true increase."

2 MS. BROWN: I know, but he's  
 3 got to at least finish and then  
 4 you can follow up.

5 BY MR. WATTS:

6 Q. Go ahead. Go ahead. I  
 7 didn't mean to cut you off. Go ahead.  
 8 A. Okay.

9 So the fact that there's an  
 10 increase in prevalence does not  
 11 necessarily reflect the presence of  
 12 environmental risk factors.

13 Q. Could be artifactual, but if  
 14 it's not artifactual, it has to be  
 15 environmental. Agreed?

16 A. I don't think it has to be  
 17 anything. I think that there could be  
 18 other factors that we are, as of yet,  
 19 unaware of.

20 Q. Okay. So let's talk about  
 21 whether it's artifactual.

22 But before we go there,  
 23 let's -- let's talk about the increase of  
 24 prevalence over time.

<p>1 Let me show you Exhibit 417. 2 (Document marked for 3 identification as Exhibit 4 Kolevzon 417.) 5 BY MR. WATTS: 6 Q. Do you know who 7 Dr. Hertz-Pannier is? 8 A. I don't know her personally. 9 Q. But you published with her? 10 A. I may have been on papers 11 with her, but I don't know her. 12 Q. Okay. And she did a lot of 13 work with respect to the increase in 14 prevalence in -- shown in certain 15 databases out in California; is that 16 right? 17 MS. BROWN: Objection. 18 Lacks foundation. 19 THE WITNESS: I know that 20 she works with some California 21 databases, yes. 22 BY MR. WATTS: 23 Q. And if you go to Page 3 of 24 20.</p>	<p>Page 114</p> <p>1 I apologize. 2 THE WITNESS: Thanks. 3 BY MR. WATTS: 4 Q. Just go to Page 3 of 20, and 5 I'm going to ask you about the data. And 6 then you and I are going to talk about 7 the different reasons that you think it's 8 artifactual. 9 A. Yeah, okay. I just want to 10 look at the way the study was done. 11 MS. BROWN: Okay. Give us a 12 second to organize our exhibits. 13 THE WITNESS: I'm going to 14 need more time with this paper. I 15 mean, I have not seen this paper 16 before. So if you are going to 17 ask me questions about it, I need 18 more time to review it. 19 BY MR. WATTS: 20 Q. Well, let me just ask you -- 21 and I want to be fair to you. 22 This is something you 23 haven't seen before? 24 A. Correct.</p>
<p>1 A. Hold on. Hold on one 2 second. Let me just look at the 3 abstract. 4 MS. BROWN: I think we only 5 have a page. 6 If this is Exhibit 417 -- 7 are we looking at the same thing? 8 THE WITNESS: "The Rise in 9 Autism and the Role of Age at 10 Diagnosis." 11 MS. BROWN: Is that it? Our 12 hardcopy just has one page. 13 MR. WATTS: There's one page 14 in your folder? 15 THE WITNESS: Two pages. 16 MS. BROWN: It looks -- 17 Mr. Watts, it looks like it's just 18 the abstract. 19 MR. WATTS: That's odd. 20 Here, let me give you mine. 21 MS. BROWN: Okay. 22 MR. WATTS: Will you make 23 sure that we substitute the right 24 one in there?</p>	<p>Page 115</p> <p>1 Q. Okay. And then last 2 question, and then we'll go on, because I 3 don't want to talk to you about something 4 that you haven't seen. 5 Just on the results on 6 Page 3 of 20. Do you see how it says, 7 "Autism incidence in children rose 8 throughout the period. Cumulative 9 incidence to five years of age per 10,000 10 births rose from 6.2 for 1990 births to 11 42.5 for 2001 births"?</p> <p>12 MS. BROWN: And I'll just 13 object. The witness asked for 14 more time with a paper he's never 15 seen. 16 So if you want to ask him 17 about the paper, that's fine. He 18 just needs time to look at it. 19 BY MR. WATTS: 20 Q. I'm just asking about this 21 one sentence. 22 Do you see that, sir? 23 MS. BROWN: Well, I object 24 as lacking foundation.</p>

<p>1 BY MR. WATTS:</p> <p>2 Q. Go ahead.</p> <p>3 A. So I see that that's what's</p> <p>4 written on the page, but I have no way to</p> <p>5 evaluate it.</p> <p>6 Q. And the way I want to ask</p> <p>7 the question is this:</p> <p>8 The difference between 6.2</p> <p>9 and 42.5, how would you express that</p> <p>10 change in rate?</p> <p>11 A. Again, I think it --</p> <p>12 MS. BROWN: Object. It</p> <p>13 lacks foundation. I object.</p> <p>14 He's never seen this article</p> <p>15 before and he asked for more time</p> <p>16 to answer your question.</p> <p>17 So I object.</p> <p>18 MR. WATTS: You can have a</p> <p>19 running objection.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Go ahead.</p> <p>22 A. I seek to understand the</p> <p>23 methods of the paper. I need to</p> <p>24 understand the cohort, the rigor, the</p>	Page 118	<p>1 MS. BROWN: I object as</p> <p>2 lacking foundation.</p> <p>3 THE WITNESS: I think the</p> <p>4 consensus in the scientific</p> <p>5 community is the prevalence of</p> <p>6 autism is increasing. And the</p> <p>7 reason it is increasing is because</p> <p>8 of a number of different factors.</p> <p>9 But, yes, you would probably</p> <p>10 label those artifactual.</p> <p>11 MR. WATTS: Okay.</p> <p>12 Objection. Nonresponsive.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. I'm asking about you and</p> <p>15 your report.</p> <p>16 And in your report you</p> <p>17 suggest five artifactual reasons that</p> <p>18 explain whatever the rate increase is,</p> <p>19 right?</p> <p>20 A. My report reflects on the</p> <p>21 reasons that the prevalence rates have</p> <p>22 gone up.</p> <p>23 Q. Okay.</p> <p>24 A. And my opinion is that there</p>	Page 120
<p>1 science.</p> <p>2 Q. Okay. And my question is,</p> <p>3 what's the difference between 6.2 and</p> <p>4 42.5, mathematically?</p> <p>5 A. Well, if you want a</p> <p>6 mathematical --</p> <p>7 Q. Yeah.</p> <p>8 A. It's times seven.</p> <p>9 Q. Okay. So seven-times</p> <p>10 increase, right?</p>	Page 119	<p>1 isn't a true increase in the -- in the</p> <p>2 incidence.</p> <p>3 And if there is one paper</p> <p>4 that says that there is, I need to</p> <p>5 evaluate that paper more, in order to</p> <p>6 comment.</p> <p>7 Q. I understand.</p> <p>8 Now I want to talk to you</p> <p>9 about the incidence increase over the</p> <p>10 last decade.</p>	Page 121
<p>11 MS. BROWN: Objection.</p> <p>12 Lacks foundation.</p> <p>13 THE WITNESS: That's the</p> <p>14 quantitative difference, but I</p> <p>15 don't know how that relates or how</p> <p>16 that's relevant to the incidence</p> <p>17 of autism.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Okay. So the reason I ask</p> <p>20 about this is this seven-time difference,</p> <p>21 quantitatively, between 1990 and 2001, in</p> <p>22 your report, you have four or five</p> <p>23 artifactual reasons that you think that</p> <p>24 difference exists, right?</p>		<p>11 Can I have that back? And</p> <p>12 then I'll get you a copy during the</p> <p>13 break.</p> <p>14 MR. WATTS: Will you go get</p> <p>15 that?</p> <p>16 MS. BROWN: Do you want to</p> <p>17 take a break now so we can get him</p> <p>18 a copy before you start --</p> <p>19 MR. WATTS: We're going to</p> <p>20 go on to something else. Let me</p> <p>21 finish this section and we'll take</p> <p>22 a break.</p> <p>23 MS. BROWN: Okay. And I'll</p> <p>24 just continue to object to the</p>	

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1 extent the witness needs a copy -- 2 MR. WATTS: Yes. 3 MS. BROWN: -- and time to 4 review before he answers questions 5 about a paper he's said he has 6 never seen before. 7 MR. WATTS: Let's go to one 8 you wrote. Exhibit 422. 9 (Document marked for 10 identification as Exhibit 11 Kolevzon 422.)	1 A. I did. 2 Q. Okay. Was he your boss 3 between 2000 and 2009? 4 A. No, he was my boss between 5 2007 and 2009. 6 Q. Okay. Is he a medical 7 doctor that you respect? 8 A. I respect Dr. Hollander. 9 Q. Okay. He is a fine 10 researcher in the field of autism 11 spectrum disorders, right?
12 THE WITNESS: Ah, first 13 edition.	12 A. Dr. Hollander does a lot of 13 research in autism. I don't always agree 14 with his conclusions, but he does a lot 15 of research.
14 BY MR. WATTS:	16 Q. And, again, I'm not trying 17 to get you to say something to get you in 18 trouble with your buddies.
15 Q. There you go. 16 You wrote this in 2011, 17 right?	19 But in science, you can have 20 two different outstanding researchers who 21 both employ sound science and can come up 22 with this different opinions, right?
18 A. I think this was published 19 in 2011. I probably wrote it before 20 then, but...	23 MS. BROWN: Well, I object 24 as vague.
21 Q. Go to Page 568. 22 A. 568. 23 Q. It's in the very back. 24 By the way, just for the	25 Page 123 1 record, there are three book chapters 2 that you included in here. I'm going to 3 the third one. 4 You wrote three. So 568 is 5 towards the back. Chapter 47, "Future 6 Directions." 7 A. "Future Directions." Okay. 8 Q. And by the way, if we go to 9 567 --
10 MR. WATTS: Erik, the 11 previous page, please. 12 BY MR. WATTS: 13 Q. This is a book chapter that 14 you wrote with Eric Hollander. Did you 15 work with Dr. Hollander at Mount Sinai 16 for a number of years? 17 A. I did, yes. 18 Q. How long did you work 19 together with Eric Hollander? 20 A. I think Eric -- I was in 21 Mount Sinai from 2000. Eric was there 22 well before me, and I think he was there 23 until 2009. So about nine years. 24 Q. Did you work under him?	26 Page 125 1 Are you talking about 2 generally or are you talking about 3 related to his opinions in this 4 case? 5 BY MR. WATTS: 6 Q. Go ahead. 7 A. I think -- 8 MS. BROWN: Same objection. 9 Go ahead. 10 THE WITNESS: I think it 11 depends on what the issue is and 12 what the data show. 13 BY MR. WATTS: 14 Q. Okay. But my point is, is 15 that Dr. Kolevzon is an autism spectrum 16 disorder researcher for whom you hold the 17 highest regard?
	18 MS. BROWN: He is 19 Dr. Kolevzon. 20 THE WITNESS: Dr. Kolevzon? 21 I am Dr. Kolevzon. 22 BY MR. WATTS: 23 Q. Well, I knew that one was 24 true. I meant Dr. --

<p>1 MS. BROWN: So he is very, 2 very well respected.</p> <p>3 THE WITNESS: I like to 4 think I'm more humble than that, 5 but...</p> <p>6 BY MR. WATTS:</p> <p>7 Q. You know, if we can't laugh 8 about moments like that, you can't laugh.</p> <p>9 Other than holding yourself 10 in high regard, you hold Dr. Hollander in 11 high regard as an outstanding researcher 12 in the -- in the field of autism spectrum 13 disorder?</p> <p>14 MS. BROWN: Same objection.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Go ahead.</p> <p>17 A. I respect Dr. Hollander as a 18 well-intentioned, thoughtful scientist.</p> <p>19 Q. How about Dr. Coyle?</p> <p>20 A. I respect Dr. Coyle as a 21 well-intentioned, thoughtful scientist.</p> <p>22 Q. Okay. And if we go to the 23 next page, under "Prevalence," the three 24 of you write, "The prevalence of autism</p>	<p>Page 126</p> <p>1 wrote with Dr. Katz?</p> <p>2 MS. BROWN: Hang on. 491?</p> <p>3 MR. WATTS: Yes, ma'am.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Julia Katz?</p> <p>6 MS. BROWN: Hang on. We're 7 getting it out.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Is Julia Katz an autism 10 researcher you respect?</p> <p>11 A. Julia was a resident in 12 general psychiatry. So she is not an 13 autism researcher, no. She did autism 14 research in this case.</p> <p>15 Q. Yeah. I mean, we all start 16 off as a resident, right?</p> <p>17 A. Basically. I mean...</p> <p>18 Q. Some of us are such 19 outstanding researchers we can write 20 books during our residency, can't we?</p> <p>21 A. Some of us.</p> <p>22 Q. Abraham Reichenberg was not 23 in his residency when he co-authored this 24 article with you, right?</p>
<p>Page 127</p> <p>1 continues to grow. The most recent 2 Center for Disease Control and Prevention 3 estimates suggest 1 in 110 persons have 4 an ASD, which is higher than the earlier 5 estimates of 1 in 150 affected 6 individuals."</p> <p>7 Did I read that right?</p> <p>8 A. Yes.</p> <p>9 Q. Let's move forward to 10 Exhibit 479, which is your report in the 11 Daniels-Feasel case.</p> <p>12 Page 9 of 94. Now we are in 13 November of 2018?</p> <p>14 And by here, in 15 Paragraph III (a), you say the prevalence 16 rate is 1 in 59; is that right?</p> <p>17 A. I'm quoting the CDC.</p> <p>18 Q. Okay. And then let's go to 19 2021. Exhibit 491.</p> <p>20 (Document marked for 21 identification as Exhibit 22 Kolevzon 491.)</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Do you recall a paper you</p>	<p>Page 129</p> <p>1 A. Dr. Reichenberg is a -- is 2 an epidemiologist and Ph.D., so he 3 doesn't do a residency.</p> <p>4 Q. Okay. Go to Page 2. The 5 introduction.</p> <p>6 The three of you, with 7 respect to prevalence at this time, and 8 we're now in March of 2021, say, "The 9 prevalence of ASD has been increasing in 10 recent decades and current estimates from 11 the Center for Disease Control (CDC) 12 suggest that 1 in 54 children in the U.S. 13 aged eight years has ASD."</p> <p>14 Did I read that right?</p> <p>15 A. Yeah, those were the CDC 16 rates at the time that we published this.</p> <p>17 Q. And then lastly, 18 Exhibit 568.</p> <p>19 (Document marked for 20 identification as Exhibit 21 Kolevzon 568.)</p> <p>22 BY MR. WATTS:</p> <p>23 Q. I saw in your supplemental 24 disclosure last night that you read the</p>

<p style="text-align: right;">Page 130</p> <p>1 transcript of Wendy Chung's deposition.  2 A. I did, yeah.  3 Q. Let me show you Exhibit 568,  4 which is a PowerPoint that she published  5 on April 25th of 2023, entitled, "SPARK  6 and the Future of Autism Research."  7 MS. BROWN: Yeah. I'll just  8 object to the form as inconsistent  9 with her testimony about this.  10 Go ahead.  11 MR. WATTS: Okay. And I  12 will stipulate that what she  13 testified to is inconsistent with  14 what she's written.  15 I'm kidding. Let's go on.  16 MS. BROWN: I get the sense  17 that you guys think that. I think  18 it's --  19 BY MR. WATTS:  20 Q. By the way, Doctor, Alli and  21 I are good friends, and we can joust.  22 It's nothing personal.  23 A. I was told not to do any  24 humor, so...</p>	<p style="text-align: right;">Page 132</p> <p>1 identification as Exhibit  2 Kolevzon 543.)  3 BY MR. WATTS:  4 Q. I took the studies we just  5 went through, between 2011 and 2023, and  6 without making you retread all these  7 numbers, I'm sure somebody at the fine  8 firm where Alli comes from will check my  9 math.  10 Can we agree that the rate  11 of reported ASD from 2011 to 2023 has  12 increased during those 12-year period?  13 MS. BROWN: Okay. And I'll  14 object.  15 Can you tell us what this  16 is.  17 Did you make this, Mr.  18 Watts?  19 MR. WATTS: I did.  20 MS. BROWN: Okay. So I'm  21 going to object as lacking  22 foundation to this un-cited,  23 lawyer-created chart.  24 BY MR. WATTS:</p>
<p style="text-align: right;">Page 131</p> <p>1 Q. Try not to be funny.  2 Let's go to Page 7, please.  3 MS. BROWN: Which in and of  4 itself is hilarious.  5 All right. We're focusing  6 on Exhibit 560?  7 MR. WATTS: 8.  8 MS. BROWN: 8.  9 BY MR. WATTS:  10 Q. And in April 2023 Dr. Chung  11 says, "The prevalence of autism,  12 according to 2020 data, has increased to  13 1 in 36 eight-year-old children."  14 Do you see that?  15 A. I see what's written on the  16 screen, yes.  17 Q. All right. Now, let me show  18 you Exhibit 543, just for a second.  19 MS. BROWN: And this is the  20 last one?  21 MR. WATTS: We'll take our  22 break after this.  23 MS. BROWN: Great.  24 (Document marked for</p>	<p style="text-align: right;">Page 133</p> <p>1 Q. Just the ones we just read  2 in show an increase between 2011 and 2023  3 in the rate of ASD prevalence reported  4 over that time, right?  5 A. So over this period of time,  6 there have been dramatic changes that  7 have contributed to the increase in  8 prevalence of autism.  9 Q. Okay.  10 A. The CDC, whose rates you've  11 quoted, uses a methodology that, by  12 itself, inflates the rates. And so if  13 you're asking me whether or not rates  14 have gone up, prevalence rates, over the  15 last 12 years, the answer is yes,  16 undoubtedly.  17 Q. Okay. With respect to the  18 issue of whether the rates of reported  19 ASD have gone up, we can agree that that  20 has happened. You just say there are  21 reasons for it that are artifactual,  22 fair?  23 A. Fair.  24 MR. WATTS: Okay. We're</p>

<p>1 going to take our break and then 2 we're going to talk about those 3 reasons.</p> <p>4 THE WITNESS: Great.</p> <p>5 MR. WATTS: All right.</p> <p>6 THE VIDEOGRAPHER: The time 7 right now is 9:40 a.m. We are off 8 the record.</p> <p>9 (Short break.)</p> <p>10 THE VIDEOGRAPHER: The time 11 right now is 10:00 a.m. We're 12 back on the record.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. I want to go back to the 15 Katz paper that you co-authored in March 16 of 2021, Exhibit 491.</p> <p>17 And the purpose of the 18 review says, "Given the ongoing rise in 19 prevalence of autism spectrum disorder 20 (ASD)" -- and then you go on to say, 21 "There is an urgent need to identify 22 modifiable risk factors for ASD."</p> <p>23 What is a modifiable risk 24 factor?</p>	Page 134	<p>1 factors that broadly include A, B, C, D, 2 and E."</p> <p>3 Do you see that, sir?</p> <p>4 A. I do.</p> <p>5 MR. WATTS: Now, if you 6 would put up Exhibit 545, just for 7 a second, Erik.</p> <p>8 (Document marked for 9 identification as Exhibit 10 Kolevzon 545.)</p> <p>11 BY MR. WATTS:</p> <p>12 Q. What I've done is I've taken 13 A, B, C, D, and E and put it into an 14 Excel chart.</p> <p>15 And here is my question: 16 First of all, under the 17 explanation, did I correctly transpose 18 from your report the five reasons that 19 you posit explain the increase in the 20 reported prevalence rate increase of ASD?</p> <p>21 A. Yeah. I think the only 22 clarification I would make is it's not 23 about calculating the prevalence rate, 24 it's about the ascertainment.</p>	Page 136
<p>1 A. It's one where you can 2 manipulate the environment in some way or 3 you can provide some sort of medication 4 to either prevent or alleviate symptoms.</p> <p>5 Q. So a modifiable risk factor, 6 by definition, relates to environmental 7 causes of ASD?</p> <p>8 A. Not by definition and not 9 exclusively. But environmental risk 10 factors could be considered a modifiable 11 risk factor, yes.</p> <p>12 Q. Okay. Now let's go into the 13 reasons for the increase of the 14 prevalence, and I want to refer you to 15 your report, Exhibit 403, Pages 16 and 16 17, and Paragraph 39. Can you pull that 17 up.</p> <p>18 A. Sorry, page? Page what?</p> <p>19 Q. 16 and 17, Paragraph 39.</p> <p>20 Okay. Now, you acknowledge 21 that prevalence rates have gone up, but 22 you say, "It's unlikely the true 23 incidence of ASD is increasing. This 24 discrepancy is due to a combination of</p>	Page 135	<p>1 Q. Okay. Now, here is my 2 question: 3 Each of these five factors 4 that you listed in your report, for 5 example, E, "changes in law and society," 6 you reference something that happened 7 back in 1991, right?</p> <p>8 A. Yes.</p> <p>9 MR. WATTS: Okay. So, Erik, 10 could you write "1991" under date.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now, in C, for example, 13 "younger age of diagnosis," you report 14 this is something that happened back in 15 2007, right?</p> <p>16 A. There are many factors that 17 contributed to younger age of diagnosis. 18 But in 2007 is when the recommendation 19 from the American Academy of Pediatrics 20 came out.</p> <p>21 MR. WATTS: Okay. Type in 22 "2007" under B, Erik.</p> <p>23 TRIAL TECH: I'm sorry, 24 under D or?</p>	Page 137

	Page 138		Page 140
1	MR. WATTS: B.	1	Is that what you said in
2	THE WITNESS: No, no.	2	that report?
3	MR. WATTS: Apologies. Type	3	A. It's true that those are
4	in "2007" under C.	4	better measures to detect autism, but
5	BY MR. WATTS:	5	that's not necessarily --
6	Q. Now, under D, the	6	Q. And those better measures
7	"improvements in diagnostic	7	happened in 1989 and 2003, right?
8	ascertainment," you reference a	8	A. Right. But the ability to
9	behavioral tool called ADOS in your	9	detect autism and ascertainment methods
10	Daniels-Feasel report and then Autism	10	can sometimes be different.
11	Diagnostic Interview-Revised, an ADI-R,	11	Q. Okay. With respect to this
12	in that same report.	12	report, those are the two things that you
13	You know what those are?	13	referenced, right?
14	A. I do.	14	A. So in this report, I'm
15	Q. And here is my question.	15	talking about two different tools that
16	From the standpoint of	16	were developed that improved our ability
17	improvements of diagnostic ascertainment,	17	to detect autism.
18	the ADOS was created by Catherine Lord,	18	Q. That happened in 1989 and
19	Michael Rutter, Pamela DiLavore, and	19	2003.
20	Susan Risi back in 1989, right?	20	A. Well, there have been
21	A. That's correct.	21	multiple revisions over time that have
22	Q. And the ADI-R was developed	22	improved the tools. But they were
23	by Rutter, Ann Lecouteur, and Catherine	23	originally developed earlier, yes.
24	Lord in 2003; is that right?	24	Q. Okay.
	Page 139		Page 141
1	A. Both those things are	1	MR. WATTS: Now go back to
2	correct. But neither one of those things	2	Exhibit 545, Erik.
3	would I necessarily attribute to the	3	BY MR. WATTS:
4	improvement in diagnostic ascertainment.	4	Q. And so 1989 and 2003.
5	Q. Well, let's go and see what	5	The expansion of ASD
6	you said in Exhibit 479, which was your	6	diagnostic criteria. Are you talking
7	Daniels-Feasel report.	7	about the iterations of the DSM?
8	Go to Page 10 of 94.	8	A. I am.
9	MR. WATTS: You don't need	9	Q. Okay. And if we look at the
10	to type Exhibit 479.	10	iterations of the DSM, the DSM-III was
11	MS. BROWN: Hang on. Do we	11	published what year?
12	have it? Did we already look at	12	A. 1987.
13	this one?	13	Q. Are you sure that wasn't the
14	THE WITNESS: Yeah.	14	DSM-III-Revised?
15	MS. BROWN: Okay. Let's	15	A. Oh, correct. Sorry.
16	just find it.	16	Q. 1980 -- let me just kind of
17	MR. WATTS: 794. III (b).	17	lead you through this.
18	BY MR. WATTS:	18	1980 was the DSM-III, right?
19	Q. And three lines down you	19	A. Correct.
20	say, "Finally, behavior assessment tools,	20	Q. 1987 was the
21	such as the Autism Diagnostic Observation	21	DSM-III-Revised.
22	Schedule (ADOS) and the Autism Diagnostic	22	A. R, yeah.
23	Interview-Revised have improved our	23	Q. 1994 was the DSM-IV?
24	ability to detect autism."	24	A. Yes.

<p>1 Q. And 2013 was the DSM-V?</p> <p>2 A. Correct.</p> <p>3 Q. Okay. So when we talk about</p> <p>4 B, that would be the various iterations</p> <p>5 of the DSM, the Diagnostic and</p> <p>6 Statistical Manual, right?</p> <p>7 A. Correct.</p> <p>8 Q. All right. So that happened</p> <p>9 between 1980 and 2013, right?</p> <p>10 A. Yes. The most dramatic of</p> <p>11 which probably was 2013.</p> <p>12 Q. All right. Now, with</p> <p>13 respect to A, the "methodological issues</p> <p>14 in calculating prevalence rates," your</p> <p>15 report references a study by Avchen,</p> <p>16 right?</p> <p>17 A. Yes.</p> <p>18 Q. And basically what you're</p> <p>19 saying is that because of the data found</p> <p>20 in Avchen, the calculated prevalence rate</p> <p>21 may be inaccurate; is that right?</p> <p>22 A. So I need -- I need to make</p> <p>23 a couple of comments about this.</p> <p>24 Q. First of all, is that right,</p>	<p>Page 142</p> <p>1 that --</p> <p>2 MS. BROWN: Well, let him</p> <p>3 finish and then you can follow up.</p> <p>4 Go ahead.</p> <p>5 THE WITNESS: It's commonly</p> <p>6 accepted that the diagnosis of</p> <p>7 autism requires a clinician to</p> <p>8 observe a child, and that</p> <p>9 requirement is not embedded within</p> <p>10 the ADDM, the CDC criteria.</p> <p>11 And when Avchen went and</p> <p>12 looked at a subset of people who</p> <p>13 had been diagnosed, according to</p> <p>14 the CDC criteria, found that a</p> <p>15 certain percentage did not meet</p> <p>16 criteria.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay.</p> <p>19 A. And that's consistent across</p> <p>20 clinics and that's consistent across the</p> <p>21 literature. And that -- that's just the</p> <p>22 way that the scientific community accepts</p> <p>23 the increase in prevalence.</p> <p>24 Q. What was my question?</p>
<p>1 and then you can make your comment.</p> <p>2 A. So Avchen is one paper which</p> <p>3 supports my opinion.</p> <p>4 Q. It's one you cited, right?</p> <p>5 A. I cite it.</p> <p>6 I have 20 years of</p> <p>7 experience that support my opinion.</p> <p>8 The consensus within the</p> <p>9 scientific community supports my opinion.</p> <p>10 But more importantly, I</p> <p>11 don't think it's fair to assign a</p> <p>12 specific date to these dynamic issues</p> <p>13 that have been unfolding for the last</p> <p>14 50 years.</p> <p>15 Q. Avchen looked at</p> <p>16 177 children in Atlanta who were born in</p> <p>17 1997 and went to public schools in 2005,</p> <p>18 right?</p> <p>19 A. Yeah.</p> <p>20 Q. Did you cite to any other</p> <p>21 specific studies referencing</p> <p>22 methodological issues in calculating</p> <p>23 prevalence rates, other than Avchen?</p> <p>24 A. It's commonly accepted</p>	<p>Page 143</p> <p>1 A. Your question was whether --</p> <p>2 well, why don't you repeat your question.</p> <p>3 Q. Sure.</p> <p>4 Did you cite to any other</p> <p>5 studies in support of your proposition</p> <p>6 other than Avchen?</p> <p>7 A. I provided Avchen as a</p> <p>8 reference.</p> <p>9 Q. As an example?</p> <p>10 A. But not to imply that that's</p> <p>11 the only reference --</p> <p>12 Q. Sure.</p> <p>13 A. -- or that that's the</p> <p>14 totality of the literature that I'm</p> <p>15 relying on.</p> <p>16 Q. Sure. But you understand</p> <p>17 when you write a report and you drop</p> <p>18 footnotes, I'm going to read those</p> <p>19 footnotes.</p> <p>20 A. Yeah.</p> <p>21 MS. BROWN: Objection.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. And if you cite one example,</p> <p>24 and I go read it and can joust about that</p>

1 one example. And then you come in and  
 2 say, oh, it's conclusive, the scientific  
 3 community knows this, and like that, that  
 4 doesn't provide me with any other studies  
 5 that back it up, does it?

6 MS. BROWN: No. I object.  
 7 That lacks foundation. It's  
 8 argumentative, and it's also false.

9 BY MR. WATTS:

10 Q. Go ahead.

11 A. I think it's clear, based on  
 12 my record and my experience and my  
 13 publications, that I'm considered an  
 14 expert. I think it's clear that I can be  
 15 representing the scientific community  
 16 under what the consensus is as it relates  
 17 to these issues. And I think it's clear  
 18 that, in general, these are the themes  
 19 that explain the increase in prevalence  
 20 rates.

21 Q. Okay. So was Avchen ever  
 22 replicated?

23 A. I think there was one other  
 24 study, but I can't recall it off the top

Page 146  
 1 of my head.

2 Q. Did Avchen state, we have  
 3 used rules to resolve discordance between  
 4 ASD diagnostic measures that have not  
 5 been studied or replicated in published  
 6 research?

7 A. If you want to discuss the  
 8 Avchen article at length, I need to pull  
 9 it out and review it.

10 MR. WATTS: Okay.

11 Exhibit 420, Page 235.

12 (Document marked for  
 13 identification as Exhibit  
 14 Kolevzon 420.)

15 BY MR. WATTS:

16 Q. The question is did they  
 17 state that.

18 First column, first full  
 19 paragraph, fourth line.

20 MR. WATTS: Blow it up.

21 No, first full paragraph.

22 "Several limitations in this  
 23 study deserve consideration."

24 BY MR. WATTS:

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1 Q. Did they state, we used  
 2 rules to resolve discordance between ASD  
 3 diagnostic measures that have not been  
 4 studied or replicated in published  
 5 research?

6 MS. BROWN: Where are we?

7 THE WITNESS: Yeah, I'm not  
 8 sure where we are.

9 MS. BROWN: Can you show us  
 10 where we are? It's not matching  
 11 up --

12 MR. WATTS: Sure. Erik  
 13 highlighted it.

14 MS. BROWN: I know, just we  
 15 want to match it up --

16 THE WITNESS: What page?

17 BY MR. WATTS:

18 Q. It's on 235. First column,  
 19 first full paragraph. And it's being  
 20 highlighted on the big screen right in  
 21 front of you.

22 A. 235.

23 MS. BROWN: I think we might  
 24 have a different article printed.

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1 Do you see this?

2 THE WITNESS: It's -- I  
 3 don't have -- I mean, 235 is  
 4 Page 1. It doesn't --

5 MS. BROWN: Yeah, we have a  
 6 different copy printed here, you  
 7 guys.

8 What is the date?

9 MR. WATTS: Erik, pull up  
 10 the paragraph, please.

11 TRIAL TECH: They're trying  
 12 to -- I'm trying to help them --

13 MR. WATTS: I want you to  
 14 blow up the paragraph that --

15 MS. BROWN: I think we just  
 16 need to get coordinated, because  
 17 we're looking at something totally  
 18 different.

19 MR. WATTS: Okay. It sounds  
 20 like we had a bad copy job, so I  
 21 apologize for that.

22 MS. BROWN: No worries.

23 BY MR. WATTS:

24 Q. Yeah. Can you see the

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<p>1 screen, sir?</p> <p>2 A. Yeah.</p> <p>3 Q. Can you see the words, "We</p> <p>4 use rules to resolve discordance between</p> <p>5 ASD diagnostic measures that have not</p> <p>6 been studied or replicated in published</p> <p>7 research"?</p> <p>8 MS. BROWN: And, Mr. Watts,</p> <p>9 I don't mean to be difficult, but</p> <p>10 we don't have this document in</p> <p>11 front of us, and I think he needs</p> <p>12 to see it just to be able to</p> <p>13 accurately answer your questions.</p> <p>14 So can we just resolve that?</p> <p>15 MR. WATTS: Take -- take my</p> <p>16 copy too.</p> <p>17 MS. BROWN: All right.</p> <p>18 MR. WATTS: I don't know</p> <p>19 what happened to your copy. I</p> <p>20 apologize.</p> <p>21 MS. BROWN: All right. No</p> <p>22 worries. Thanks very much.</p> <p>23 Thanks very much. Thank you.</p> <p>24 BY MR. WATTS:</p>	Page 150	<p>1 and then back down to 233. So I</p> <p>2 don't --</p> <p>3 MR. WATTS: Look, I would</p> <p>4 assume that whoever they sent out</p> <p>5 the copies to screwed up and used</p> <p>6 the digital version that I've</p> <p>7 given you.</p> <p>8 But if there's a problem,</p> <p>9 let me know, and I'll give you</p> <p>10 mine just like I did. I don't</p> <p>11 have a --</p> <p>12 MS. BROWN: Yours is printed</p> <p>13 with the same issue. So I just</p> <p>14 want to -- I just want to make</p> <p>15 sure we have the complete study --</p> <p>16 MR. WATTS: Of course.</p> <p>17 MS. BROWN: -- and</p> <p>18 Dr. Kolevzon has a chance to</p> <p>19 refresh on it so we can accurately</p> <p>20 answer your questions.</p> <p>21 So if you need a minute with</p> <p>22 whatever we have in front of us,</p> <p>23 please take a minute. Let's make</p> <p>24 sure we're all on the same page</p>
<p>1 Q. 235.</p> <p>2 A. Oh, it's a different</p> <p>3 pagination altogether. Okay.</p> <p>4 MS. BROWN: Okay. All</p> <p>5 right.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Do you see the words --</p> <p>8 A. I just -- I need to</p> <p>9 understand the context. I'm sorry. I</p> <p>10 appreciate these are limitations that the</p> <p>11 authors are citing. I just want to</p> <p>12 understand in what context.</p> <p>13 Q. Okay. And before we get to</p> <p>14 the full context, do the words, "We used</p> <p>15 the rules to resolve discordance between</p> <p>16 ASD diagnostic measures that have not</p> <p>17 been studied or replicated in published</p> <p>18 research," is that in there?</p> <p>19 A. Those are the words that are</p> <p>20 written on the page.</p> <p>21 Q. All right.</p> <p>22 MS. BROWN: And we can</p> <p>23 resolve this on a break, but both</p> <p>24 of the copies seem to go up to 236</p>	Page 151	<p>1 before you answer.</p> <p>2 THE WITNESS: Do you have</p> <p>3 additional questions?</p> <p>4 BY MR. WATTS:</p> <p>5 Q. No, that was the question.</p> <p>6 And then my next question</p> <p>7 is, in Avchen, did they have</p> <p>8 misclassified children who were</p> <p>9 incorrectly transferred from case to</p> <p>10 non-case status as well?</p> <p>11 A. So, again, if we want to</p> <p>12 talk about Avchen in detail, I need to</p> <p>13 review this paper again.</p> <p>14 Q. Sure.</p> <p>15 A. Okay.</p> <p>16 Q. Right up above that</p> <p>17 paragraph.</p> <p>18 Do you see where it says,</p> <p>19 "Several more misclassified children were</p> <p>20 incorrectly" --</p> <p>21 A. Sorry. I have to go back to</p> <p>22 the methods. This is -- you know, you're</p> <p>23 asking me to comment on --</p> <p>24 MS. BROWN: Take as long as</p>

<p>1 you need.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. I'm really not asking you to</p> <p>4 comment. I'm asking you, can you see the</p> <p>5 words on the paper?</p> <p>6 MS. BROWN: Yeah, but in</p> <p>7 order to answer your question, he</p> <p>8 needs to look --</p> <p>9 MR. WATTS: He needs to look</p> <p>10 at the paper and tell me whether</p> <p>11 it's there. We don't need to</p> <p>12 waste ten minutes reading all</p> <p>13 these articles.</p> <p>14 MS. BROWN: But -- well, I</p> <p>15 just don't think that's fair, sir.</p> <p>16 If he wanted to comment -- hang</p> <p>17 on --</p> <p>18 MR. WATTS: I'm not asking</p> <p>19 for a comment --</p> <p>20 MS. BROWN: Hold on. Let me</p> <p>21 put my objection on the record.</p> <p>22 MR. WATTS: Okay.</p> <p>23 MS. BROWN: The witness has</p> <p>24 been given a document. He's asked</p>	<p>Page 154</p> <p>1 A. 2011.</p> <p>2 Q. Now, with respect to -- go</p> <p>3 back to 545 for a second.</p> <p>4 I want to talk about this</p> <p>5 expansion of diagnostic criteria.</p> <p>6 In your report, you cite to</p> <p>7 a paper by Wazana. Do you know</p> <p>8 Dr. Wazana?</p> <p>9 A. I do not.</p> <p>10 Q. And Wazana, is that the one</p> <p>11 source she gave with respect to the issue</p> <p>12 of the expansion of ASD diagnostic</p> <p>13 criteria, Footnote 27?</p> <p>14 A. Sorry, can you repeat the</p> <p>15 question?</p> <p>16 Q. Sure.</p> <p>17 Exhibit 403 --</p> <p>18 MS. BROWN: Is that your --</p> <p>19 I think we're on your report.</p> <p>20 MR. WATTS: Yes.</p> <p>21 THE WITNESS: The Wazana</p> <p>22 paper.</p> <p>23 Oh, you're talking about my</p> <p>24 reference in the report to Wazana?</p> <p>Page 155</p> <p>1 for a moment to review and refresh</p> <p>2 on the document to accurately and</p> <p>3 truthfully provide testimony in</p> <p>4 this deposition.</p> <p>5 So I'm going to object to</p> <p>6 anything that doesn't allow him</p> <p>7 enough time to do that.</p> <p>8 MR. WATTS: Okay. Your</p> <p>9 objection is noted.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. And my question is, can you</p> <p>12 see on the screen, "Several more</p> <p>13 misclassified children were incorrectly</p> <p>14 transferred from case to non-case</p> <p>15 status"?</p> <p>16 A. I'm able to read those words</p> <p>17 on the screen. I'm not able to interpret</p> <p>18 the meaning or the significance of them.</p> <p>19 Q. Now, this article that you</p> <p>20 want to read is one that you cited in</p> <p>21 your report, right?</p> <p>22 A. Correct.</p> <p>23 Q. Okay. Now, Avchen was dated</p> <p>24 what year?</p>	<p>Page 156</p> <p>1 A. 2011.</p> <p>2 Q. Now, with respect to -- go</p> <p>3 back to 545 for a second.</p> <p>4 I want to talk about this</p> <p>5 expansion of diagnostic criteria.</p> <p>6 In your report, you cite to</p> <p>7 a paper by Wazana. Do you know</p> <p>8 Dr. Wazana?</p> <p>9 A. I do not.</p> <p>10 Q. And Wazana, is that the one</p> <p>11 source she gave with respect to the issue</p> <p>12 of the expansion of ASD diagnostic</p> <p>13 criteria, Footnote 27?</p> <p>14 A. Sorry, can you repeat the</p> <p>15 question?</p> <p>16 Q. Sure.</p> <p>17 Exhibit 403 --</p> <p>18 MS. BROWN: Is that your --</p> <p>19 I think we're on your report.</p> <p>20 MR. WATTS: Yes.</p> <p>21 THE WITNESS: The Wazana</p> <p>22 paper.</p> <p>23 Oh, you're talking about my</p> <p>24 reference in the report to Wazana?</p> <p>Page 157</p> <p>1 MS. BROWN: Yep.</p> <p>2 THE WITNESS: Oh, okay.</p> <p>3 So what was the question?</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Sure. Paragraph 42.</p> <p>6 MS. BROWN: Paragraph 42 of</p> <p>7 your report.</p> <p>8 MR. WATTS: Exhibit 403.</p> <p>9 THE WITNESS: That's my</p> <p>10 report.</p> <p>11 MR. WATTS: Page 18,</p> <p>12 Paragraph 42.</p> <p>13 THE WITNESS: 42. Yep.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. You say, "Additional factors</p> <p>16 that could drive ASD prevalence rates</p> <p>17 higher have been described in published</p> <p>18 literature," and you provide Wazana in</p> <p>19 2007; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. Now, here is my question:</p> <p>22 With respect to Wazana, have</p> <p>23 you read any articles that criticize the</p> <p>24 work by Wazana as being not legitimate?</p>
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<p>1 MS. BROWN: Objection. 2 Vague. 3 THE WITNESS: I may or may 4 not have. I don't recall at this 5 point. 6 MR. WATTS: Pull up 417, 7 Hertz-Picciotto paper from January 8 of 2009. 9 Now, is this a study that 10 you told me you had not read 11 before? 12 A. I believe so. 13 Q. Okay. Go to Page 8 and 9, 14 and put them up split screen so we can 15 see them both. 16 MS. BROWN: Okay. Hold on. 17 This is the one we -- 18 THE WITNESS: This is the 19 one that we don't have -- 20 MS. BROWN: It's okay. 21 MR. WATTS: Okay. Hold on. 22 Hold on. I'll give it to you. 23 Put up 8 and 9 on the split 24 screen, Erik, please. Thank you.</p>	<p>Page 158</p> <p>1 Specifically, they rely on a reported 2 analysis of DDS data used follow-up to a 3 specific calendar date rather than to a 4 specific age. This inflates the decline 5 in age at diagnosis because children from 6 recent birth cohorts are too young for 7 calculation of diagnosed at older age. 8 Using longer follow-up and equivalent 9 follow-up periods, we recalculated the 10 mean age at diagnosis for birth cohorts 11 from 1990 to 1996 to be 5.23, 5.16, 5.12, 12 5.18, 5.02, 4.90, 4.83, a tenfold smaller 13 shift (0.14 years between 1991 and 1994) 14 than what was assumed in the simulation 15 study of 1.6 years. This shift is 16 evident from our Figure 4. 17 Secondly, the extremely 18 large increases found in the simulation 19 observed only in the analysis of 20 cumulative incidence to age four years 21 (labeled 'prevalence' by the authors.) 22 When the simulation's carried out to age 23 12 years, the magnitude of the explained 24 increase is much less. By this age, the</p>
<p>1 And then highlight the 2 bottom of 8, "simulation study by 3 Wazana," all the way to the top of 4 9. 5 MS. BROWN: Okay. Hang on 6 one second. 7 Here is a hardcopy. And, 8 again, if this is something you're 9 not familiar with, take as long as 10 you need to orient yourself to be 11 able to answer the questions. 12 BY MR. WATTS: 13 Q. "Simulation study by Wazana 14 et al. suggests that an apparent increase 15 of as much as 28-fold could be explained 16 by a combination of three artifacts: a 17 change in case definition, a decline in 18 age of diagnosis, and better 19 ascertainment. Several problems with 20 this analysis detract from the 21 validity" -- "from its validity and 22 applicability. First, the data they use 23 for the decline in mean age at diagnosis 24 are based on noncomparable cohorts.</p>	<p>Page 159</p> <p>1 impact of age at diagnosis is largely 2 eliminated, and the magnitude of 3 artifactual increases that result from 4 the other two assumptions (change in 5 definition and more efficient) combine to 6 a 2.4-fold increase. This prediction is 7 much smaller than the actual increases in 8 autism rates in the California DDS data, 9 even if we assume, as Wazana et al. did, 10 that all clinicians were using DSM-III in 11 the earlier period (unlikely, given that 12 the DSM-III-Revised had already been 13 adopted) and all clinicians were using 14 the DSM-IV at the end of our study 15 period."</p> <p>16 Were you aware of this 17 criticism of Wazana before you cited it? 18 MS. BROWN: Objection to the 19 form of the question. 20 THE WITNESS: So Wazana is 21 one reference among many that 22 contributes to my opinions about 23 the increasing prevalence of 24 autism and is very commonly</p>

	Page 162	Page 164
1 accepted in the scientific	1	Go to your report. We're back to
2 community.	2	your report.
3 The fact that there's	3	THE WITNESS: Yeah.
4 another paper that criticizes one	4	MS. BROWN: He wants to ask
5 of the many papers that I cite	5	you about another citation at
6 doesn't change my opinion.	6	Paragraph 43.
7 MR. WATTS: Objection.	7	Do you need it back?
8 Nonresponsive.	8	MR. WATTS: I'll get it
9 BY MR. WATTS:	9	back.
10 Q. Were you aware of this	10	THE WITNESS: Yes.
11 criticism of Wazana when you cited it?	11	BY MR. WATTS:
12 A. So you've already asked me	12	Q. So you cite Volkmar in 1988
13 that question.	13	as examining "a sample of 52 individuals
14 Q. You didn't answer it.	14	with autism diagnosed by clinical experts
15 A. I did.	15	and 62 individuals with developmental
16 MS. BROWN: Well, let him	16	disability with autism -- without autism
17 answer again.	17	and applied criteria from two different
18 THE WITNESS: You've asked	18	editions of DSM.
19 me if I have seen this paper.	19	"Applying the DSM-III
20 BY MR. WATTS:	20	criteria to this cohort correctly
21 Q. Were you aware of it?	21	diagnosed 42/52, or 81 percent, with
22 A. I -- I had not seen this	22	autism and incorrectly diagnosed 4/62, or
23 paper, no.	23	6.5, developmentally disabled individuals
24 Q. Okay. Let's go to Volkmar.	24	as having autism"; is that right?
	Page 163	
1 MS. BROWN: Were you done	1	Page 165
2 with your answer, Doctor?	2	A. Yes.
3 THE WITNESS: Only to	3	Q. All right. So the net
4 clarify that in order for me to be	4	effect is 6 out of 62 were undercounted,
5 thoughtful and careful about my	5	15 percent undercount, right?
6 answer as it relates to this paper	6	A. The purpose of this study
7 and this criticism, I need to	7	was to show that by applying different
8 spend time reviewing it because I	8	criteria, you can change the prevalence
9 haven't seen it before.	9	and the autism diagnosis. And that's
10 BY MR. WATTS:	10	what they did.
11 Q. Okay. Let's go to	11	Q. What was my question?
12 Volkmar --	12	Was the net effect that the
13 MS. BROWN: He's done	13	undercount was 15 percent, or 6 of 62?
14 though, Mr. Watts. Let him	14	A. In this small cohort, that
15 finish.	15	shows sort of a proof of concept, yes.
16 Was there anything else?	16	Q. What was the increase in ASD
17 THE WITNESS: I'm done.	17	prevalence between 1987 and 1994 when the
18 MS. BROWN: Okay.	18	DSM-III-Revised was in place before
19 BY MR. WATTS:	19	DSM-IV came out?
20 Q. Let's go to Volkmar. Is	20	A. I'm not aware of exactly
21 that the next study that you cite in	21	what the increase was between those two
22 Paragraph 43?	22	years.
23 Exhibit 403, Paragraph 43.	23	Q. Did you provide any studies
24 MS. BROWN: I'll take this.	24	showing the numerical impact of
		DSM-III-Revised on subsequent prevalence

<p>1 rates?</p> <p>2 A. From DSM-III to DSM-III-R?</p> <p>3 In my report?</p> <p>4 Q. Yep.</p> <p>5 A. No. This -- this article</p> <p>6 and the idea behind this section of the</p> <p>7 report reflects the fact that when</p> <p>8 diagnostic criteria are broadened, more</p> <p>9 people are included in the diagnosis.</p> <p>10 That is inarguable.</p> <p>11 Q. Did you provide any studies</p> <p>12 showing the numerical impact of</p> <p>13 DSM-III-Revised on subsequent prevalence</p> <p>14 rates? Yes or no?</p> <p>15 MS. BROWN: Objection.</p> <p>16 Asked and answered.</p> <p>17 THE WITNESS: As I said, the</p> <p>18 premise here is that prevalence</p> <p>19 has increased. It's increased for</p> <p>20 a variety of reasons. Here is one</p> <p>21 example of a reason. Here is one</p> <p>22 study to support that.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Did you provide any studies</p>	<p>Page 166</p> <p>1 specific issue.</p> <p>2 Q. Okay. Now, with respect to</p> <p>3 your statement on Page 19, Paragraph 44,</p> <p>4 you say, "It's noteworthy that the DSM</p> <p>5 criteria for autism spectrum disorder</p> <p>6 have continued to expand since autism</p> <p>7 first became a diagnostic entity in</p> <p>8 DSM-III in 1980."</p> <p>9 Do you see that, sir?</p> <p>10 A. Yes.</p> <p>11 Q. Are you suggesting that the</p> <p>12 rate of autism prevalence that we see in</p> <p>13 this country from 2013 to 2023 is a</p> <p>14 result of DSM-V diagnostic criteria</p> <p>15 replacing DSM-IV?</p> <p>16 A. I'm suggesting that there's</p> <p>17 a whole number of factors that contribute</p> <p>18 to the increase in prevalence and, among</p> <p>19 them, the change in criteria may</p> <p>20 contribute, yes.</p> <p>21 Q. What percentage of the</p> <p>22 increase in the rate of prevalence of ASD</p> <p>23 diagnosis do the studies show is</p> <p>24 attributable to DSM-V being utilized as</p>
<p>1 showing the numerical impact of</p> <p>2 DSM-III-Revised on subsequent prevalence</p> <p>3 rates?</p> <p>4 MS. BROWN: I object. He's</p> <p>5 answered it three times now. I'm</p> <p>6 looking at the answer.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. It's a yes-or-no.</p> <p>9 MS. BROWN: It is -- he</p> <p>10 already answered it. It's there.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. What studies did you provide</p> <p>13 showing the numerical impact of</p> <p>14 DSM-III-Revised?</p> <p>15 A. So the study that I am</p> <p>16 citing here shows the concept that when</p> <p>17 you change criteria, you can actually</p> <p>18 have an increase in prevalence, even</p> <p>19 within the same cohort.</p> <p>20 Q. What percentage of the</p> <p>21 increased prevalence between 1987 and</p> <p>22 1994 did scientific studies attribute to</p> <p>23 the revised criteria in DSM-III-Revised?</p> <p>24 A. I have not investigated that</p>	<p>Page 167</p> <p>1 opposed to DSM-IV?</p> <p>2 A. I have not investigated that</p> <p>3 specific issue.</p> <p>4 Q. Well, you cited to Tidmarsh,</p> <p>5 right?</p> <p>6 A. That's a citation, yes.</p> <p>7 Q. And Tidmarsh didn't try to</p> <p>8 quantify that increase of rate, right?</p> <p>9 A. Well, the Tidmarsh paper was</p> <p>10 written -- or was a chapter in 2003.</p> <p>11 Q. Okay. So that doesn't have</p> <p>12 anything to do with DSM-V replacing</p> <p>13 DSM-IV, agreed?</p> <p>14 A. Again, I think we're kind of</p> <p>15 missing the forest for the trees here,</p> <p>16 where diagnostic criteria have changed</p> <p>17 steadily since the autism was first</p> <p>18 described. That broadening of diagnostic</p> <p>19 criteria has led to an increase in</p> <p>20 prevalence, among many other factors.</p> <p>21 MR. WATTS: Objection.</p> <p>22 Nonresponsive.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Tidmarsh didn't have</p>

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1 anything to do with explaining the  
 2 increase in rate of prevalence of autism  
 3 spectrum disorder since the publication  
 4 of DSM-V in 2013, agreed?  
 5 A. Tidmarsh was published in  
 6 2003. So the answer is no, because the  
 7 criteria would change in 2013.  
 8 Q. Let go to LaSalle in 2023.  
 9 Exhibit 511, please.  
 10 (Document marked for  
 11 identification as Exhibit  
 12 Kolevzon 511.)  
 13 BY MR. WATTS:  
 14 Q. And as we look at the  
 15 introduction, second sentence, "The  
 16 prevalence of ASD has been steadily  
 17 increasing over the past 20 years, from  
 18 U.S. child estimates of 0.66 percent in  
 19 2002, 1.13 percent in 2008, 1.85 in 2016,  
 20 and 2.27 percent in 2018. Changes over  
 21 this period in the rate of ASD is in part  
 22 due to increased awareness and changing  
 23 diagnoses. However, even estimates that  
 24 account for diagnostic changes still

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1 leave an apparent increase that cannot  
 2 likely be explained by genetics alone."  
 3 Is that what it says?  
 4 A. Those are the words on the  
 5 page.  
 6 Q. And at the bottom of that  
 7 first paragraph, it says, "Together,  
 8 these findings have demonstrated that ASD  
 9 etiology is decidedly complex, involving  
 10 hundreds of genes and interactions with  
 11 environmental factors."  
 12 Is that what it says?  
 13 A. So, again, those are words  
 14 on the page. This is a paper that I have  
 15 not reviewed.  
 16 But I need to clarify some  
 17 points of this before I agree with it in  
 18 totality.  
 19 Q. Now, the DSM-V was published  
 20 in May of 2013, right?  
 21 A. I don't recall the exact  
 22 month, but it was definitely 2013.  
 23 Q. Okay. If your report says  
 24 that, would you buy what you said?

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1 A. Yes.  
 2 Q. Okay. Have you read any of  
 3 the studies that have calculate the  
 4 percentage of change of prevalence rates  
 5 in autism spectrum disorder that had been  
 6 attributed to DSM-V over DSM-IV?  
 7 MS. BROWN: Objection.  
 8 Lacks foundation.  
 9 You can answer.  
 10 THE WITNESS: So I've read  
 11 some of the studies, but I don't  
 12 have an immediate memory of them  
 13 at this moment.  
 14 BY MR. WATTS:  
 15 Q. Let me take you through some  
 16 of them. And I want to start with just a  
 17 reference document. And this is  
 18 Exhibit 481.  
 19 (Document marked for  
 20 identification as Exhibit  
 21 Kolevzon 481.)  
 22 BY MR. WATTS:  
 23 Q. It's a young man named Toby  
 24 Rogers, thesis in some school in

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1 Australia.  
 2 And Page 19. I'm not going  
 3 to ask you anything about the thesis,  
 4 just what he's citing.  
 5 MR. WATTS: Page 19, Erik.  
 6 MS. BROWN: I'm going to  
 7 object to this gentleman's thesis  
 8 as lacking foundation.  
 9 And just for the record, I  
 10 have like a three-inch stack of  
 11 printed dissertation here that I  
 12 am aware that Dr. Kolevzon has  
 13 never seen before.  
 14 So lacks foundation. And to  
 15 the extent you need time to at  
 16 least flip through Mr. Toby  
 17 Rogers' paper.  
 18 BY MR. WATTS:  
 19 Q. Go to Page 19. I'm not  
 20 going to ask you about anything else.  
 21 Here is my question:  
 22 On Page 19 --  
 23 MR. WATTS: Blow up Barton,  
 24 Robins -- just that paragraph,

<p>1 Erik. Yep.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. And he cites to Barton,</p> <p>4 Robins, Brennan, and Fein in 2013, and</p> <p>5 Mazefsky, McPartland, Gastgeb and Minshew</p> <p>6 in 2013, who "concluded that the more</p> <p>7 precise definition of autism in DSM-V</p> <p>8 will result in fewer numbers of children</p> <p>9 diagnosed with autism."</p> <p>10 Do you see that?</p> <p>11 A. I see the words that are</p> <p>12 written on the page.</p> <p>13 Q. Are you familiar with the</p> <p>14 Barton paper in 2013 or the Mazefsky</p> <p>15 paper in 2013?</p> <p>16 A. I'm familiar with the</p> <p>17 concerns at the time that the change in</p> <p>18 diagnostic criteria would sort of lead to</p> <p>19 people losing their diagnosis.</p> <p>20 MR. WATTS: Objection --</p> <p>21 THE WITNESS: I'm not</p> <p>22 familiar with this specific paper.</p> <p>23 Or if I've read it, I don't</p> <p>24 recall.</p>	Page 174	<p>1 think that's --</p> <p>2 (Document marked for</p> <p>3 identification as Exhibit</p> <p>4 Kolevzon 433.)</p> <p>5 MS. BROWN: And for the</p> <p>6 record, where did Tony Rogers'</p> <p>7 [sic] dissertation come from? How</p> <p>8 can we --</p> <p>9 MR. WATTS: In Australia.</p> <p>10 And I only used it for purposes of</p> <p>11 pointing out two studies to see</p> <p>12 whether he knew it was there. I'm</p> <p>13 not going to ask any more --</p> <p>14 MS. BROWN: I understand. I</p> <p>15 just want, for the record, how</p> <p>16 would one access this paper.</p> <p>17 MR. WATTS: I can -- well,</p> <p>18 Number 1, you've got it. And</p> <p>19 Number 2, I'll show you how.</p> <p>20 MS. BROWN: Okay. Let's</p> <p>21 just add to the record, before we</p> <p>22 close the deposition, a link, a</p> <p>23 cite, something that would allow</p> <p>24 someone in the public to access</p>	Page 176
<p>1 BY MR. WATTS:</p> <p>2 Q. Okay. How about the Maenner</p> <p>3 paper in 2014, have you read it?</p> <p>4 A. Maenner is one of the main</p> <p>5 authors on the CDC papers. So I don't</p> <p>6 know this exact reference that they are</p> <p>7 referring to. But I may or may not have</p> <p>8 read it.</p> <p>9 Q. And it says that the DSM-V</p> <p>10 definition would lead to an 11.5 percent</p> <p>11 decrease in the number of children</p> <p>12 diagnosed with autism.</p> <p>13 Did you know that?</p> <p>14 A. You're reading from a person</p> <p>15 I never heard of, for a dissertation that</p> <p>16 is not peer-reviewed, and for a reference</p> <p>17 that I had no knowledge of --</p> <p>18 Q. Let's go to Maenner's</p> <p>19 paper --</p> <p>20 MS. BROWN: Wait. Let him</p> <p>21 finish, though, please.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Let's go to Maenner's paper</p> <p>24 that was peer-reviewed, Exhibit 433. I</p>	Page 175	<p>1 this.</p> <p>2 MR. WATTS: Sure.</p> <p>3 And I've already given you a</p> <p>4 disc with the documents, so you'll</p> <p>5 be able to see it there as well.</p> <p>6 MS. BROWN: I know. It's</p> <p>7 just we don't have time to review</p> <p>8 the three inches of his</p> <p>9 dissertation. So I want to know</p> <p>10 how to access it.</p> <p>11 MR. WATTS: So what you do</p> <p>12 is you type in "Toby Rogers" or</p> <p>13 the title and you turn on the</p> <p>14 Google machine and it will come</p> <p>15 up.</p> <p>16 MS. BROWN: Okay. That's</p> <p>17 what I wanted to know.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Okay. Now, enough of this.</p> <p>20 Exhibit 433. Matthew</p> <p>21 Maenner.</p> <p>22 Have you read this -- have</p> <p>23 you read this article before?</p> <p>24 MS. BROWN: Hang on.</p>	Page 177

<p>1 BY MR. WATTS:</p> <p>2 Q. Have you ever seen it</p> <p>3 before?</p> <p>4 A. I recall this paper coming</p> <p>5 out. I don't remember the details of it.</p> <p>6 I'd have to review it if you wanted me to</p> <p>7 be --</p> <p>8 Q. So --</p> <p>9 MS. BROWN: Wait. Let him</p> <p>10 finish.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Maenner's article is</p> <p>13 entitled, "Potential Impact of DSM-V</p> <p>14 Criteria on Autism Spectrum Disorder</p> <p>15 Prevalence Estimates."</p> <p>16 Published in JAMA Psychiatry</p> <p>17 in March of 2014. And your testimony is</p> <p>18 you recall it coming out but you don't</p> <p>19 recall reading it, correct?</p> <p>20 A. No.</p> <p>21 MS. BROWN: Well --</p> <p>22 THE WITNESS: My testimony</p> <p>23 is that I recall it coming out,</p> <p>24 but I don't remember the details</p>	Page 178	<p>1 A. Hold on. Hold on. I'm</p> <p>2 sorry.</p> <p>3 We have to go, just for</p> <p>4 clarification, to the methods. All</p> <p>5 right. So the methods used for this</p> <p>6 study were based on coded behaviors</p> <p>7 documented in children's medical records</p> <p>8 and educational evaluations. These are</p> <p>9 not proxies for the diagnosis. This is</p> <p>10 the problem with the CDC methods overall.</p> <p>11 And so the fact that Dr. Maenner has now</p> <p>12 taken the CDC methods and applied it to</p> <p>13 the DSM-III -- DSM-IV and the DSM-V</p> <p>14 doesn't mean that I necessarily would</p> <p>15 agree with these results.</p> <p>16 Q. Did you put this in your</p> <p>17 materials considered?</p> <p>18 A. Did I put what in my</p> <p>19 materials considered?</p> <p>20 Q. The Maenner paper.</p> <p>21 A. This particular paper? I</p> <p>22 don't know if I did or not.</p> <p>23 Q. Okay. Let's go to the</p> <p>24 Sturmey paper of 2013, Exhibit 437.</p>	Page 180
<p>1 off the top of my head.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Okay. So --</p> <p>4 A. And I'll also say that</p> <p>5 Maenner is using methods from the</p> <p>6 CDC-monitoring sites, which is one of the</p> <p>7 methods that has contributed to</p> <p>8 increasing prevalence.</p> <p>9 Q. And Maenner, on Page 2 of</p> <p>10 20, in the results, "Based on these</p> <p>11 findings, ASD prevalence per 1,000 for</p> <p>12 2008 would have been 10.0 (95 percent</p> <p>13 confidence interval, 9.6 to 10.3) using</p> <p>14 DSM-V criteria compared with reported</p> <p>15 prevalence based on DSM-IV-TR criteria of</p> <p>16 11.0 to 11.7."</p> <p>17 Did I read that correctly?</p> <p>18 MS. BROWN: I object as</p> <p>19 lacking foundation.</p> <p>20 This is an article he said</p> <p>21 he's not familiar with.</p> <p>22 THE WITNESS: Yes. But --</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Okay.</p>	Page 179	<p>1 (Document marked for</p> <p>2 identification as Exhibit</p> <p>3 Kolevzon 437.)</p> <p>4 BY MR. WATTS:</p> <p>5 Q. The abstract --</p> <p>6 MS. BROWN: Hang on. Let's</p> <p>7 just give him a second to get the</p> <p>8 copy so he can answer the</p> <p>9 question.</p> <p>10 MR. WATTS: Pull up the</p> <p>11 abstract.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. "Systematic review of</p> <p>14 empirical papers comparing the</p> <p>15 application of DSM-IV and DSM-V</p> <p>16 diagnostic criteria for Autism Spectrum</p> <p>17 Disorders identified 12 papers. The</p> <p>18 application of DSM-V diagnostic criteria</p> <p>19 resulted in approximately a one-third</p> <p>20 reduction in Autism Spectrum Disorders."</p> <p>21 Did I read that correctly?</p> <p>22 A. Those are the words on the</p> <p>23 page, yes.</p> <p>24 Q. Did you cite to any of those</p>	Page 181

12 papers saying that DSM-V resulted in a  
contraction of the number of autism  
spectrum disorders being reported?

A. I don't know whether those  
papers are cited in my reference list or  
not.

Q. Okay. In terms of the  
quantum of that subtraction -- go to Page  
251.

"In reviewing those  
12 papers, the median overall change in  
diagnosis of ASD from all papers was  
negative 36.97 percent."

Do you see that, sir?

A. I see what they've said on  
the paper.

Q. Now --

A. This is not in -- not  
consistent with the way that it's viewed  
in the community. It's not consistent  
with my experience as a clinician.

The idea that we're debating  
whether or not change in diagnostic  
criteria have led to an increase in

prevalence to me is misguided.

MR. WATTS: Doctor,  
nonresponsive.

MS. BROWN: Object.

BY MR. WATTS:

Q. My question is, did you ever  
see Sturmey's paper before I just showed  
it to you?

A. I don't recall whether I  
have or haven't.

Q. Let's go to Zander's paper  
in 2015, Exhibit 443.

(Document marked for  
identification as Exhibit  
Kolevzon 443.)

BY MR. WATTS:

Q. A "New DSM-V Impairment  
Criterion: A Challenge to Early Autism  
Spectrum Disorder Diagnosis?" by Eric  
Zander, published online in June 28,  
2015.

Did you cite this in your  
materials considered?

A. I don't know if I did or

didn't.

Q. On the second page -- I'm  
sorry, on Page 3640.

MS. BROWN: Let's give him a  
minute to familiarize himself with  
the paper.

BY MR. WATTS:

Q. Well, as we're familiarizing  
ourselves.

MR. WATTS: Let's go back to  
3636. I want to set the stage.

MS. BROWN: I'm just going  
to object. The hardcopy is  
missing pages, and to the extent  
that he's not familiar with it, we  
need to get him a copy that he can  
read to answer your questions.

MR. WATTS: 3636.

THE WITNESS: I'm sorry, I'm  
still on this paper.

MS. BROWN: Take your time.  
Take you time.

This -- my copy was missing  
pages. If you want a complete

one, you might want to look at  
this.

MR. WATTS: Erik, did you  
pre-highlight this stuff?

TRIAL TECH: Yes.

MR. WATTS: Can you push  
click so the highlighting comes up  
so we can figure it out?

TRIAL TECH: On Page 3636?

MR. WATTS: Yeah.

BY MR. WATTS:

Q. "The objective of the  
current study was to investigate the  
impact of the new DSM-V impairment  
criterion on diagnosing ASD in toddlers  
and young preschoolers."

A. It looks like -- and I'm  
just seeing this for the first time.  
It's focused on the impairment criterion  
using an adaptive behavior scale.

Q. Now, when you say you're  
seeing it for the first time, you hadn't  
seen it before I just showed it to you?

A. I don't recall seeing this

<p>1 before.</p> <p>2 Q. Okay. If we go to 3641.</p> <p>3 The conclusion after that objective was</p> <p>4 set says, "Our findings indicate that a</p> <p>5 strict application of this DSM-V</p> <p>6 criterion would compromise the</p> <p>7 possibility for very young children to</p> <p>8 get an ASD diagnosis despite exhibiting</p> <p>9 the defining symptomatology."</p> <p>10 Do you see that, sir?</p> <p>11 MS. BROWN: I object to</p> <p>12 lacking foundation. He said he</p> <p>13 hasn't seen the article before.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. You hadn't seen it, had you?</p> <p>16 MS. BROWN: Well, he asked</p> <p>17 for a minute to read --</p> <p>18 THE WITNESS: You asked me</p> <p>19 two different questions.</p> <p>20 MS. BROWN: -- and</p> <p>21 familiarize himself with the</p> <p>22 article.</p> <p>23 THE WITNESS: You asked me</p> <p>24 two questions. One, do I see the</p>	<p>Page 186</p>	<p>1 studies identified indicated a reduction</p> <p>2 in the number of people with a DSM-IV or</p> <p>3 DSM-IV-TR ASD diagnosis being eligible</p> <p>4 for a DSM-V ASD diagnosis" -- and "a 35</p> <p>5 and 37 percent reduction respectfully."</p> <p>6 MS. BROWN: And I object as</p> <p>7 lacking foundation.</p> <p>8 Mr. Watts, what we're doing</p> <p>9 is just reading random sentences</p> <p>10 in articles that he's testified he</p> <p>11 would like a minute to review and</p> <p>12 he has not seen before. So I</p> <p>13 object --</p> <p>14 MR. WATTS: Well, that's my</p> <p>15 question, have you see it before.</p> <p>16 MS. BROWN: Wait. Let me</p> <p>17 just put this on the record.</p> <p>18 MR. WATTS: And, Alli, your</p> <p>19 job is to say "Objection to form."</p> <p>20 MS. BROWN: I understand.</p> <p>21 But what you're doing is not fair.</p> <p>22 MR. WATTS: I know, but when</p> <p>23 you're giving speeches, you're</p> <p>24 coaching the witness.</p>
<p>1 words on the page? The answer's</p> <p>2 yes.</p> <p>3 Two, if I see -- I don't</p> <p>4 recall seeing this paper.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Let's go to Bennett, 2016,</p> <p>7 Exhibit 447.</p> <p>8 (Document marked for</p> <p>9 identification as Exhibit</p> <p>10 Kolevzon 447.)</p> <p>11 BY MR. WATTS:</p> <p>12 Q. "A Meta-Analysis of DSM-V</p> <p>13 Autism Diagnoses in Relation to DSM-IV</p> <p>14 and DSM-IV-TR?"</p> <p>15 Published in the Review</p> <p>16 Journal of Autism and Developmental</p> <p>17 Disorders in 2016. The author is Matthew</p> <p>18 Bennett.</p> <p>19 MS. BROWN: And, again,</p> <p>20 Doctor, if you haven't seen this</p> <p>21 before, take as long as you need</p> <p>22 to familiarize yourself with it.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Page 2, it says, "All 24</p>	<p>Page 187</p>	<p>1 MS. BROWN: Well, first of</p> <p>2 all, that's not -- that's not</p> <p>3 fair.</p> <p>4 MR. WATTS: You can't give a</p> <p>5 speech every time. You can say,</p> <p>6 "Objection. Form."</p> <p>7 MS. BROWN: I need to</p> <p>8 preserve an objection to this</p> <p>9 line --</p> <p>10 MR. WATTS: Have you read</p> <p>11 the deposition protocol order?</p> <p>12 MS. BROWN: I have.</p> <p>13 MR. WATTS: Okay. So --</p> <p>14 MS. BROWN: And I am</p> <p>15 absolutely complying it --</p> <p>16 complying with it.</p> <p>17 MR. WATTS: Okay.</p> <p>18 MS. BROWN: But what doesn't</p> <p>19 comply with it is when a witness</p> <p>20 asks for time to look at something</p> <p>21 and you continue to just read</p> <p>22 random sentences.</p> <p>23 I object to that. And it</p> <p>24 lacks foundation. And it's</p>

<p>1       improper.</p> <p>2 BY MR. WATTS:</p> <p>3       Q. Doctor, have you ever seen</p> <p>4       this paper before?</p> <p>5       A. I can't say whether I have</p> <p>6       or I haven't.</p> <p>7       MR. WATTS: Go to Baio,</p> <p>8       2018, Exhibit 475.</p> <p>9       (Document marked for</p> <p>10      identification as Exhibit</p> <p>11      Kolevzon 475.)</p> <p>12      MS. BROWN: Please finish</p> <p>13      your answer.</p> <p>14      Did you have something you</p> <p>15      were answering?</p> <p>16      THE WITNESS: I feel like</p> <p>17      it's important to understand all</p> <p>18      of these papers in their context,</p> <p>19      right.</p> <p>20      When the DSM-V came out</p> <p>21      there were concerns that people</p> <p>22      would lose their diagnosis, and so</p> <p>23      lots of papers came out on both</p> <p>24      sides of this issue, some showing</p>	<p>Page 190</p> <p>1       Q. Doctor, my only question is,</p> <p>2       have you seen this before?</p> <p>3       A. Yes.</p> <p>4       Q. Okay. Let's go to Cartolano</p> <p>5       in 2018, Exhibit 476.</p> <p>6       (Document marked for</p> <p>7       identification as Exhibit</p> <p>8       Kolevzon 476.)</p> <p>9       MS. BROWN: One second.</p> <p>10      BY MR. WATTS:</p> <p>11      Q. And in fairness to you, I'm</p> <p>12      sure, I won't blame you if you haven't</p> <p>13      seen this one. It looks like it's some</p> <p>14      sort of a graduate student study.</p> <p>15      "Under the Umbrella:</p> <p>16      Redefining the Spectrum of Autism."</p> <p>17      Without being critical, have</p> <p>18      you ever seen this before?</p> <p>19      A. Definitely not.</p> <p>20      Q. Okay. Let's keep going.</p> <p>21      You know who Dr. Fombonne</p> <p>22      is?</p> <p>23      A. Yes.</p> <p>24      Q. Exhibit 477.</p>
<p>1       they wouldn't, some showing that</p> <p>2       they would, and it was a very kind</p> <p>3       of heightened time.</p> <p>4       Since then, it's clear that</p> <p>5       prevalence rates have increased,</p> <p>6       and it's clear that many, many,</p> <p>7       many factors have contributed,</p> <p>8       including the broadening</p> <p>9       diagnostic criteria.</p> <p>10      BY MR. WATTS:</p> <p>11      Q. You done?</p> <p>12      A. Yes.</p> <p>13      MR. WATTS: Objection.</p> <p>14      Nonresponsive.</p> <p>15      MS. BROWN: Objection.</p> <p>16      BY MR. WATTS:</p> <p>17      Q. Go to Exhibit 475.</p> <p>18      Have you seen the Baio</p> <p>19      paper, published by the Centers for</p> <p>20      Disease Control and Prevention in 2018?</p> <p>21      MS. BROWN: Give us a minute</p> <p>22      to just get the hardcopy in front</p> <p>23      of him. Take a minute.</p> <p>24      BY MR. WATTS:</p>	<p>Page 191</p> <p>1       (Document marked for</p> <p>2       identification as Exhibit</p> <p>3       Kolevzon 477.)</p> <p>4      BY MR. WATTS:</p> <p>5       Q. You cited this paper in your</p> <p>6       reliance materials at Footnote 25.</p> <p>7       And the question I have is</p> <p>8       on Page 9 of 13, Footnote 1, where</p> <p>9       Dr. Fombonne --</p> <p>10      A. Hold on.</p> <p>11      MS. BROWN: Just one second,</p> <p>12      please.</p> <p>13      BY MR. WATTS:</p> <p>14      Q. Page 9 of 13.</p> <p>15      A. Just give me a second.</p> <p>16      Q. Yeah.</p> <p>17      In Footnote 1 it says,</p> <p>18      "Calculated by the author from Baio et</p> <p>19      al. (2018), Page 12."</p> <p>20      Then it says, The DSM-IV-TR</p> <p>21      prevalence in the same subsample was</p> <p>22      1.77 percent (4,236 plus 4,222 over 20 --</p> <p>23      263,775). The DSM prevalence is reduced</p> <p>24      by 18.1 percent compared to that of the</p>
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<p>1 DSM-IV-TR.</p> <p>2 Have you ever talked to</p> <p>3 Dr. Fombonne about his calculation about</p> <p>4 the reduction in prevalence under DSM-V</p> <p>5 versus DSM-IV?</p> <p>6 MS. BROWN: Objection.</p> <p>7 Lacks foundation.</p> <p>8 THE WITNESS: I've talked to</p> <p>9 Dr. Fombonne about the rise in</p> <p>10 prevalence of autism, but not</p> <p>11 about this specific calculation.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. Let's go to</p> <p>14 Exhibit 490.</p> <p>15 (Document marked for</p> <p>16 identification as Exhibit</p> <p>17 Kolevzon 490.)</p> <p>18 MR. WATTS: Kalra in 2021.</p> <p>19 MS. BROWN: What's the</p> <p>20 number? 490?</p> <p>21 BY MR. WATTS:</p> <p>22 Q. "Comparison of diagnostic</p> <p>23 criteria for autism spectrum disorder</p> <p>24 (ASD) using Diagnostic and Statistical</p>	<p>Page 194</p> <p>1 BY MR. WATTS:</p> <p>2 Q. I assume you have seen this.</p> <p>3 MS. BROWN: Take a minute to</p> <p>4 answer.</p> <p>5 THE WITNESS: This exhibit</p> <p>6 is a?</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Press release.</p> <p>9 A. Press release from the CDC.</p> <p>10 Q. Okay. And --</p> <p>11 MS. BROWN: Let's just give</p> <p>12 him a minute to read it.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. It says, under "Main</p> <p>15 findings," "The findings suggested that</p> <p>16 estimates of the number of children with</p> <p>17 ASD might be lower using the current</p> <p>18 DSM-V criteria than using the previous</p> <p>19 DSM-IV-TR criteria."</p> <p>20 Do you see that, sir?</p> <p>21 MS. BROWN: Object as</p> <p>22 lacking foundation.</p> <p>23 If you need a minute to look</p> <p>24 at this and understand what this</p>
<p>1 Manual (DSM) and International</p> <p>2 Classification of Diseases (ICD)."</p> <p>3 In fairness, this is a study</p> <p>4 in Northern India. Have you ever seen</p> <p>5 this?</p> <p>6 A. I don't recall if I have or</p> <p>7 not.</p> <p>8 Q. Okay.</p> <p>9 MS. BROWN: Well, if you</p> <p>10 have not -- I mean, he should</p> <p>11 probably take a minute to check if</p> <p>12 you want a truthful answer.</p> <p>13 MR. WATTS: I'm happy with</p> <p>14 the answer he gave, because I</p> <p>15 wouldn't expect anybody to see it</p> <p>16 anyway.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. We'll go to one he should</p> <p>19 have seen.</p> <p>20 Exhibit 498, the CDC, in</p> <p>21 2022.</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 498.)</p>	<p>Page 195</p> <p>1 press release is about, please</p> <p>2 take it.</p> <p>3 THE WITNESS: So I see the</p> <p>4 words on the page, but I don't</p> <p>5 know on what basis they are making</p> <p>6 this conclusion, and I don't know</p> <p>7 what study they are relying on.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Did you cite to this press</p> <p>10 release?</p> <p>11 A. I don't know if I cited to</p> <p>12 this press release or not.</p> <p>13 Q. Have you ever seen that the</p> <p>14 CDC says that the number of children with</p> <p>15 ASD might be lower using the current</p> <p>16 DSM-V criteria rather than using the</p> <p>17 DSM-IV-TR criteria?</p> <p>18 MS. BROWN: I object. That</p> <p>19 misstates this document and the</p> <p>20 CDC's position.</p> <p>21 THE WITNESS: I don't know</p> <p>22 what this reference refers to</p> <p>23 specifically in terms of studies.</p> <p>24 I know that the CDC methods</p>

<p>1 of calculating prevalence of 2 autism are fundamentally flawed. 3 BY MR. WATTS: 4 Q. Have you called the CDC and 5 told them that? 6 A. No. 7 Q. Have you written to Congress 8 telling them that their money is being 9 spent on a fundamentally flawed 10 calculation at the CDC? 11 MS. BROWN: I object. I 12 object. That lacks foundation -- 13 THE WITNESS: I don't see 14 that as my role. 15 BY MR. WATTS: 16 Q. Have you published a single 17 article stating that the CDC prevalence 18 calculation methodology is mistaken? 19 MS. BROWN: Objection to the 20 form of the question. 21 THE WITNESS: So the 22 scientific community that examines 23 these issues has raised concerns 24 about the methods, about how these</p>	<p>Page 198</p>	<p>1 professionally and in my teaching. And 2 my view is consistent with the general 3 view. 4 And, by the way, it's just 5 factually correct. You cannot make the 6 diagnosis of autism based purely on 7 school records and symptoms that appear 8 in school records that are consistent 9 with the criteria. 10 MR. WATTS: Objection. 11 Nonresponsive. 12 MS. BROWN: Object. 13 BY MR. WATTS: 14 Q. Have you published anything 15 saying the CDC calculation rate is in 16 error? 17 MS. BROWN: Objection. 18 Asked and answered. 19 You can answer again, 20 Dr. Kolevzon. 21 THE WITNESS: As I said, 22 when I teach, when I speak to 23 professionals, when I give 24 presentations, and this issue</p>	<p>Page 200</p>
<p>1 methods are contributing to 2 estimates that are overblown. 3 MR. WATTS: Objection. 4 Nonresponsive. 5 MS. BROWN: Object. 6 BY MR. WATTS: 7 Q. Has Alexander Kolevzon 8 published a single word saying that the 9 CDC calculations of autism spectrum 10 disorder prevalence rates is in error? 11 MS. BROWN: Objection. 12 Lacks foundation. 13 THE WITNESS: You need to be 14 specific about when you say 15 about -- when you say published. 16 BY MR. WATTS: 17 Q. Like written an article 18 telling the scientific community the CDC 19 has got it all wrong. 20 MS. BROWN: Objection. 21 BY MR. WATTS: 22 Q. Have you done that? 23 A. I have definitely spoke 24 about my concerns with the methods, both</p>	<p>Page 199</p>	<p>1 comes up, I'm certainly most vocal 2 about it. 3 BY MR. WATTS: 4 Q. Is there a reported 5 publication? 6 A. Is there a peer-reviewed 7 reported publication? 8 Q. Yes, sir. 9 A. I don't recall. 10 Q. Okay. Let's go to the 11 younger age of diagnosis. 12 Now, you reference that in 13 2007 the American Academy of Pediatrics 14 published a policy recommending 15 ASD-specific screening at 18 to 16 24 months, right? 17 A. Yes. 18 Q. And to the extent that that 19 caused a bump in prevalence rate, would 20 you give me that that's a onetime bump? 21 MS. BROWN: Objection to the 22 form. 23 THE WITNESS: No. 24 BY MR. WATTS:</p>	<p>Page 201</p>

<p style="text-align: right;">Page 202</p> <p>1 Q. Okay. So from the 2 standpoint of what happened in 2007, they 3 recommended screening at 18 months, 4 right?</p> <p>5 A. 18 and 24 months.</p> <p>6 Q. Yes.</p> <p>7 And has there been any 8 change in the date of the recommendation 9 for screening in the last 16 years since 10 2007?</p> <p>11 A. I'm not sure I understand 12 the question.</p> <p>13 Q. Sure.</p> <p>14 Has it changed, since that 15 2007 recommendation, to start diagnosing 16 between 18 and 24 months?</p> <p>17 MS. BROWN: Objection. 18 Vague. 19 You can answer if you 20 understand.</p> <p>21 THE WITNESS: Has the 22 recommendation to screen for 23 autism at 18 to 24 months changed 24 since 2007?</p>	<p style="text-align: right;">Page 204</p> <p>1 MS. BROWN: Objection. 2 Lacks foundation.</p> <p>3 THE WITNESS: The point is 4 that if you don't screen, you 5 don't detect cases; and when you 6 do screen, you do detect cases.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Okay.</p> <p>9 A. And so when screening became 10 mandated, more cases were detected.</p> <p>11 Q. Okay. And in Sheldrick they 12 said, look, the services failed to 13 provide ASD screening to Spanish-speaking 14 families, and so we need to screen for 15 Spanish-speaking families, right?</p> <p>16 MS. BROWN: If we want to 17 talk about this paper, can we pull 18 it up.</p> <p>19 MR. WATTS: No.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Is that what happened? You 22 cited it, you should know it.</p> <p>23 MS. BROWN: Well, how's he 24 going to know all these papers --</p>
<p style="text-align: right;">Page 203</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Yeah. They haven't brought 3 it down to six to eight months, is my 4 point.</p> <p>5 A. No.</p> <p>6 Q. Okay.</p> <p>7 A. But the compliance with that 8 recommendation has increased steadily.</p> <p>9 Q. Now, you cite in support of 10 this argument to a paper called Sheldrick 11 on Page 20, Footnote 35.</p> <p>12 And you say that Sheldrick 13 shows "that ASD screening and early 14 intervention of less than 3 years old is 15 associated with a 60 percent increase in 16 ASD diagnosis"; is that right?</p> <p>17 A. I'd have to pull up this 18 paper to look at it more carefully. But 19 that's what I've written on the page, 20 yes.</p> <p>21 Q. Now, you realize Sheldrick 22 was simply saying we needed to go into 23 communities of color that are not being 24 screened and start screening, right?</p>	<p style="text-align: right;">Page 205</p> <p>1 MR. WATTS: "Objection. 2 Form," Alli. Cut it out.</p> <p>3 MS. BROWN: I object to the 4 form. I object to the form.</p> <p>5 But let's be fair with him. 6 You want a truthful answer --</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Is that -- do you know what 9 Sheldrick did or not?</p> <p>10 A. As I understand it, this is 11 not an exercise in my memory. I did 12 review this paper carefully, and I'm 13 happy to go back and review it again.</p> <p>14 Q. Do you know that it had to 15 do with going into communities with 16 Spanish-speaking-only parents?</p> <p>17 A. Again, I'm happy to review 18 the methods again right now.</p> <p>19 Q. Now, let me take you back to 20 Exhibit 417, which is the Hertz-Picciotto 21 "Rise in Autism, Role of Age At 22 Diagnosis." This is the one you told me 23 you hadn't seen, right?</p> <p>24 A. I have not seen this paper.</p>

1 Q. Have you looked at any of  
 2 Dr. Hertz-Picciotto's work with respect  
 3 to the rise in autism prevalence in  
 4 California?

5 A. I'm sure I have. I don't  
 6 recall exactly what all the findings were  
 7 at this moment.

8 Q. And you realize that she  
 9 says, is the changing age of diagnosis  
 10 can only explain a 12 percent increase?

11 A. I don't know what  
 12 Dr. Hertz-Picciotto says or doesn't say  
 13 specifically.

14 Q. Go to Page 3 of 20. Let's  
 15 just pull it out there.

16 MS. BROWN: Hang on. Let's  
 17 just get the hardcopy in front of  
 18 him.

19 This is something we've  
 20 already marked?

21 THE WITNESS: This is the  
 22 one that -- this is not the full  
 23 version of it, though.

24 MS. BROWN: I think this is

1 it, right?

2 So, Counsel, this is the one  
 3 that I think we had borrowed your  
 4 copy for because we only had the  
 5 abstract. And we need to borrow  
 6 it back, please.

7 MR. WATTS: I'm giving it  
 8 back to you.

9 MS. BROWN: Thank you.

10 BY MR. WATTS:

11 Q. The last sentence of the  
 12 results on Page 3 of 20 says, "Changing  
 13 age of diagnosis can explain a 12 percent  
 14 increase," right?

15 MS. BROWN: Hang on. Object  
 16 as lacking foundation.

17 Let's let him get to the  
 18 hardcopy and review what he needs  
 19 to, to answer your question.

20 BY MR. WATTS:

21 Q. Right there.

22 A. That's what it says, yes.

23 Q. Now, if changing age at  
 24 diagnosis explains a 12 percent increase,

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1 and there's a 685 percent increase, that  
 2 means that of the increase, only  
 3 1.75 percent of it is explained by  
 4 changing age of diagnosis, doesn't it?

5 MS. BROWN: Objection.  
 6 Assumes facts. Lacks foundation.

7 THE WITNESS: So the  
 8 conclusion that's written here is  
 9 that the changing age at diagnosis  
 10 can explain a 12 percent increase,  
 11 and part of that includes also  
 12 milder cases.

13 BY MR. WATTS:

14 Q. So that's 56 percent. So  
 15 you add those together and that's  
 16 68 percent, but we had 685 percent  
 17 increase.

18 A. So there are many, many  
 19 factors that contribute to the increase  
 20 in prevalence.

21 The most likely of which and  
 22 the most, kind of, profound of which is  
 23 misidentification of cases.

24 Q. Doctor, you listed five

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1 factors, so I'm asking about them, and  
 2 the changing age of diagnosis, which is  
 3 Category C, the one study that I've been  
 4 able to pull up says it increases it by  
 5 12 out of 685 percent.

6 Do you have another study  
 7 you can point me to?

8 MS. BROWN: Objection to the  
 9 form of the question.

10 THE WITNESS: So at this  
 11 moment, off the top of my head, I  
 12 do not.

13 But when you take a swath of  
 14 people at a certain age, like  
 15 eight, and you look for people  
 16 that have been diagnosed with  
 17 autism, if they were previously  
 18 diagnosed at six or seven and now  
 19 they are being diagnosed at two or  
 20 three, you are going to include  
 21 more people in your study.

22 BY MR. WATTS:

23 Q. Sure. But they are not  
 24 going to be rediagnosed when they turn

<p>1 six or seven, right?</p> <p>2 A. No, they would -- they would</p> <p>3 count as a case.</p> <p>4 Q. So when I said it was a</p> <p>5 onetime phenomenon, that's what I meant.</p> <p>6 They are counted. They are</p> <p>7 in the system. They are not counted</p> <p>8 again when they turn six or seven again,</p> <p>9 right?</p> <p>10 A. Culturally, what this</p> <p>11 mandate did was it sensitized</p> <p>12 pediatricians across the country to the</p> <p>13 importance of screening for autism, and</p> <p>14 so whether they did it properly at 18 to</p> <p>15 24, or they were desensitized to it and</p> <p>16 did it at six or seven, the average age</p> <p>17 of diagnosis went down. It just did.</p> <p>18 Q. Doctor, and it explained a</p> <p>19 12 percent increase, but we've got a</p> <p>20 700 percent increase.</p> <p>21 A. The point being --</p> <p>22 Q. Do you have another study</p> <p>23 that says the changing age of diagnosis</p> <p>24 had a statistically more impactful result</p>	<p>Page 210</p>	<p>1 relevant today.</p> <p>2 Q. And you cite Croen in 2002;</p> <p>3 is that right?</p> <p>4 A. That's one of the references</p> <p>5 that supports that, yes.</p> <p>6 Q. Well, help me with any other</p> <p>7 reference that supports that, that you</p> <p>8 bothered to cite in this -- this report?</p> <p>9 MS. BROWN: Did you say that</p> <p>10 you bothered to say?</p> <p>11 MR. WATTS: I did.</p> <p>12 MS. BROWN: I object.</p> <p>13 That's argumentative.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Okay. So there's other</p> <p>16 ones, but you didn't give them to me, so</p> <p>17 let's talk about the one you did give.</p> <p>18 And that's Croen, right?</p> <p>19 A. Yeah. And I can also rely</p> <p>20 on my 20 years of experience in seeing</p> <p>21 thousands and thousands of kids being</p> <p>22 misdiagnosed for the purposes of</p> <p>23 educational services.</p> <p>24 Q. Doctor, did you give me a</p>	<p>Page 212</p>
<p>1 in explaining the overall increase of</p> <p>2 prevalence?</p> <p>3 MS. BROWN: Objection.</p> <p>4 Compound. Misstates the study.</p> <p>5 Misstates the evidence.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Do you have a single other</p> <p>8 study?</p> <p>9 A. You're pointing to a single</p> <p>10 study.</p> <p>11 Q. Do you have one?</p> <p>12 A. I don't have one off the top</p> <p>13 of my head right now.</p> <p>14 Q. Okay. Let's go to the</p> <p>15 changes in law in 1991.</p> <p>16 And I want to go to your</p> <p>17 report, Exhibit 403. Page 20,</p> <p>18 paragraph 46, please.</p> <p>19 All right. Now,</p> <p>20 Paragraph 46 and 47, you reference</p> <p>21 something that happened in 1991 called</p> <p>22 the Individuals with Disability Education</p> <p>23 Act?</p> <p>24 A. And it continues to be</p>	<p>Page 211</p>	<p>1 single other citation other than Croen in</p> <p>2 2002?</p> <p>3 MS. BROWN: Objection to the</p> <p>4 form of the question. Misstates</p> <p>5 the report.</p> <p>6 THE WITNESS: As one</p> <p>7 reference to support this idea</p> <p>8 that's commonly accepted in the</p> <p>9 scientific community as truthful,</p> <p>10 I've cited one reference.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. It's the only reference you</p> <p>13 gave me, right?</p> <p>14 MS. BROWN: Objection.</p> <p>15 THE WITNESS: In addition to</p> <p>16 my 20 years of experience.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. And so let's split this up.</p> <p>19 Did I only get one</p> <p>20 reference, Croen of 2002, yes or no?</p> <p>21 A. I provided one reference to</p> <p>22 support this statement.</p> <p>23 Q. Okay. And you say that</p> <p>24 reference is so excellent, it's commonly</p>	<p>Page 213</p>

<p>1 accepted as proving your point, right?</p> <p>2 A. That mischaracterizes what I</p> <p>3 said.</p> <p>4 What I said is that it's</p> <p>5 commonly accepted in the scientific</p> <p>6 community, based on decades of clinical</p> <p>7 experience, that when this law changed,</p> <p>8 families decided they wanted services and</p> <p>9 they got the -- the autism diagnosis in</p> <p>10 order to get services; it became</p> <p>11 prescriptive.</p> <p>12 Q. And as your silver bullet,</p> <p>13 you give me crown -- Croen of 2002.</p> <p>14 That's it?</p> <p>15 A. It's not a --</p> <p>16 MS. BROWN: Objection.</p> <p>17 Argumentative.</p> <p>18 Go ahead.</p> <p>19 THE WITNESS: It's not a</p> <p>20 silver bullet. It is a reference</p> <p>21 that supports the idea.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Do you have a single other</p> <p>24 reference you want to share with this</p>	<p>Page 214</p> <p>1 Footnote 36.</p> <p>2 MS. BROWN: Yep. Mm-hmm.</p> <p>3 And Dr. Kolevzon needs a</p> <p>4 break as soon as your question is</p> <p>5 not pending anymore.</p> <p>6 MR. WATTS: As soon as we</p> <p>7 get done with Croen, we'll take a</p> <p>8 break. Okay?</p> <p>9 MS. BROWN: Good.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. All right. You see how in</p> <p>12 Footnote 36 you cite to Croen,</p> <p>13 "Descriptive epidemiology of autism in a</p> <p>14 California population: Who is at risk?"</p> <p>15 Is that right?</p> <p>16 A. That looks to be the Croen</p> <p>17 reference, yes.</p> <p>18 Q. Okay. And then your only</p> <p>19 other reference is -- go to 37 and 38 --</p> <p>20 is Id. at 214; is that right?</p> <p>21 MR. WATTS: Show -- show 36,</p> <p>22 37 and 38.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. So you've given three</p>
<p>1 jury other than Croen 2002?</p> <p>2 MS. BROWN: Objection.</p> <p>3 Other than what he already</p> <p>4 testified to.</p> <p>5 THE WITNESS: I think I --</p> <p>6 as I've said, at this time,</p> <p>7 sitting here today, I do not have</p> <p>8 another reference. That isn't to</p> <p>9 say that another reference doesn't</p> <p>10 exist.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now let's visit about Croen</p> <p>13 in 2002.</p> <p>14 MS. BROWN: Were you done?</p> <p>15 THE WITNESS: Sure.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Croen in 2002, you dropped</p> <p>18 Footnote 36.</p> <p>19 MR. WATTS: Can we show --</p> <p>20 just pull up 47 and go down to the</p> <p>21 footnote so we can see it.</p> <p>22 No. No. Take that off.</p> <p>23 Okay. I want only</p> <p>24 Paragraph 47, and I want to see</p>	<p>Page 215</p> <p>1 footnotes, 36, 37, and 38.</p> <p>2 Id. means same paper, right?</p> <p>3 A. Yeah.</p> <p>4 Q. Now, I'm curious,</p> <p>5 Footnote 36 has a paper range of 217 to</p> <p>6 224, and your Id. is the 214, which is</p> <p>7 outside that range.</p> <p>8 That's a mistake, isn't it?</p> <p>9 A. Go back. Sorry.</p> <p>10 Q. Do you see 36?</p> <p>11 A. Yep.</p> <p>12 Q. And the paper range is 217</p> <p>13 to 224, right?</p> <p>14 A. Yes.</p> <p>15 Q. So it can't be an Id. at</p> <p>16 214. It's got to be something went wrong</p> <p>17 here, right?</p> <p>18 A. Most likely.</p> <p>19 Q. Okay. Now, let's talk about</p> <p>20 what went wrong.</p> <p>21 MS. BROWN: Can we give</p> <p>22 Dr. Kolevzon a bathroom break</p> <p>23 first, though?</p> <p>24 MR. WATTS: Sure.</p>

<p style="text-align: right;">Page 218</p> <p>1 MS. BROWN: Okay. Perfect.</p> <p>2 THE VIDEOGRAPHER: The time</p> <p>3 right now is 11:02 a.m. We are</p> <p>4 off the record.</p> <p>5 (Short break.)</p> <p>6 THE VIDEOGRAPHER: The time</p> <p>7 right now is 11:10 a.m. We're</p> <p>8 back on the record.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay. Doctor, we've got</p> <p>11 Footnote 36 which cites to "Descriptive</p> <p>12 epidemiology in a California population:</p> <p>13 Who is at risk?"</p> <p>14 Journal of Autism and</p> <p>15 Developmental Disorders, 2002, Volume 32,</p> <p>16 Pages 217 to 24.</p> <p>17 We clearly have a typo in</p> <p>18 Footnote 37 and 38, because it doesn't</p> <p>19 fit within the range.</p> <p>20 But let's go to the paper,</p> <p>21 which is Exhibit 408, "Descriptive</p> <p>22 Epidemiology."</p> <p>23 (Document marked for</p> <p>24 identification as Exhibit</p>	<p style="text-align: right;">Page 220</p> <p>1 it, is you cited originally to this, and</p> <p>2 you meant to cite to another one, which</p> <p>3 I'm going to take you to, which is 409.</p> <p>4 So let's just clean this up,</p> <p>5 if we could.</p> <p>6 (Document marked for</p> <p>7 identification as Exhibit</p> <p>8 Kolevzon 409.)</p> <p>9 BY MR. WATTS:</p> <p>10 Q. 409, in fairness to you, is</p> <p>11 in the same journal. It's entitled, "The</p> <p>12 Changing Prevalence in Autism in</p> <p>13 California," and it starts on Page 207</p> <p>14 and includes Page 214.</p> <p>15 Do you see that?</p> <p>16 A. Yeah. In looking at my --</p> <p>17 yeah, in looking at my description of the</p> <p>18 paper, the 36 reference is wrong, and it</p> <p>19 should be to this.</p> <p>20 Q. Right. Okay. So when you</p> <p>21 cited to 408, you meant to cite to 409.</p> <p>22 That's where we are, right?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. Now let's go to 409.</p>
<p style="text-align: right;">Page 219</p> <p>1 Kolevzon 408.)</p> <p>2 BY MR. WATTS:</p> <p>3 Q. This is the paper that you</p> <p>4 cite to in Footnote 36, right?</p> <p>5 MS. BROWN: Hold on.</p> <p>6 Okay. Got it.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Is that right, Doctor?</p> <p>9 A. Yeah. They seem consistent.</p> <p>10 Q. Yeah. And I'm going to</p> <p>11 clean it up here in a second.</p> <p>12 Go to Page 219, because</p> <p>13 there's one thing in this paper that I</p> <p>14 want you to see.</p> <p>15 It says, "Our series of</p> <p>16 children with autism is larger than the</p> <p>17 total number of children included in all</p> <p>18 previous epidemiologic studies of autism</p> <p>19 combined."</p> <p>20 Do you see that?</p> <p>21 A. I see where it says that,</p> <p>22 yeah.</p> <p>23 Q. Okay. Now, I think what</p> <p>24 happened, and not being pejorative about</p>	<p style="text-align: right;">Page 221</p> <p>1 That's what I thought. And</p> <p>2 these things happen. It's not a big</p> <p>3 deal.</p> <p>4 A. Yeah.</p> <p>5 Q. But let's go to 409.</p> <p>6 Okay. On Page 213 --</p> <p>7 A. Just let me orient myself</p> <p>8 one second.</p> <p>9 Q. In the second column, it</p> <p>10 says, "The marked increase in the</p> <p>11 prevalence of autism and MR observed for</p> <p>12 children born in 1990-1992 provides</p> <p>13 support for the hypothesis that</p> <p>14 improvements in detection may have</p> <p>15 contributed to our results."</p> <p>16 And then go to the next one.</p> <p>17 "Changes in diagnostic</p> <p>18 practices during the study period might</p> <p>19 also have contributed to the observed</p> <p>20 increase."</p> <p>21 That's what you meant to</p> <p>22 cite to, right?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. Now, this is the one</p>

<sup>1</sup> study, Exhibit 409, that you cited to, by  
<sup>2</sup> intention anyway, to support your  
<sup>3</sup> argument in this particular point dealing  
<sup>4</sup> with the change of special education law,  
<sup>5</sup> right, Croen in 2002?

<sup>6</sup> A. So it's very clear that the  
<sup>7</sup> change in special education law led to a  
<sup>8</sup> shift in diagnostic practices, and this  
<sup>9</sup> study provides some evidence that, in  
<sup>10</sup> fact, that's true.

<sup>11</sup> Q. It's the one study you  
<sup>12</sup> provided to support it, right?

<sup>13</sup> MS. BROWN: Objection.  
<sup>14</sup> Misstates testimony.

<sup>15</sup> THE WITNESS: I used this  
<sup>16</sup> study to support that statement.

<sup>17</sup> BY MR. WATTS:

<sup>18</sup> Q. And only this study?

<sup>19</sup> MS. BROWN: Objection.  
<sup>20</sup> Misstates testimony.

<sup>21</sup> THE WITNESS: This is a  
<sup>22</sup> study that I've used.

<sup>23</sup> BY MR. WATTS:

<sup>24</sup> Q. Was there any other study

<sup>1</sup> used?

<sup>2</sup> A. I haven't used any other  
<sup>3</sup> studies in this particular reference.

<sup>4</sup> Q. All right. Now, the reason  
<sup>5</sup> I ask that question is, are you familiar  
<sup>6</sup> with a Dr. Blaxill, B-L-A-X-I-L-L?

<sup>7</sup> A. I am not.

<sup>8</sup> Q. Let's look at what he had to  
<sup>9</sup> say about Croen in 2002.

<sup>10</sup> Exhibit 410, please.

<sup>11</sup> (Document marked for  
<sup>12</sup> identification as Exhibit  
<sup>13</sup> Kolevzon 410.)

<sup>14</sup> BY MR. WATTS:

<sup>15</sup> Q. This is a commentary by  
<sup>16</sup> Blaxill, Baskin, and Spitzer on Croen,  
<sup>17</sup> 2002, "The Changing Prevalence of Autism  
<sup>18</sup> in California."

<sup>19</sup> Have you seen this  
<sup>20</sup> commentary before?

<sup>21</sup> A. I don't recall if I have or  
<sup>22</sup> not.

<sup>23</sup> Q. And in the introductions,  
<sup>24</sup> just get to the meat of it.

<sup>1</sup> MS. BROWN: Just give him a  
<sup>2</sup> minute to look at it.

<sup>3</sup> BY MR. WATTS:

<sup>4</sup> Q. It says, "Their calculations  
<sup>5</sup> purport to demonstrate that over  
<sup>6</sup> 100 percent of the increase in autism  
<sup>7</sup> from 1987 to 1994 is an artifact of  
<sup>8</sup> changes in diagnostic practices. In your  
<sup>9</sup> editorial commentary, Eric Fombonne  
<sup>10</sup> praises the study, and claims Croen et  
<sup>11</sup> al. carefully analyzed the California  
<sup>12</sup> dataset. We disagree."

<sup>13</sup> Did I read that correctly?

<sup>14</sup> A. It appears that Dr. Blaxill,  
<sup>15</sup> or Mr. Blaxill, disagrees, yes.

<sup>16</sup> Q. Let's go to his conclusion  
<sup>17</sup> on Page 226.

<sup>18</sup> "Croen et al. support  
<sup>19</sup> arguments to set aside the growing body  
<sup>20</sup> of evidence that we have an epidemic of  
<sup>21</sup> autistic diseases. They have suggested  
<sup>22</sup> that 'diagnostic substitution' accounts  
<sup>23</sup> for an apparent increase in the incidence  
<sup>24</sup> of autism in California that is not real.

<sup>1</sup> This hypothesized substitution is not  
<sup>2</sup> supported by proper and detailed analyses  
<sup>3</sup> of the California data. On the contrary,  
<sup>4</sup> California continues to provide the  
<sup>5</sup> strongest evidence for the explosion in  
<sup>6</sup> the incidence of autism."

<sup>7</sup> Did I read that correctly?

<sup>8</sup> A. I don't agree with that  
<sup>9</sup> statement, but you did --

<sup>10</sup> Q. I didn't ask that. Did I  
<sup>11</sup> read it correctly?

<sup>12</sup> MS. BROWN: Let him finish,  
<sup>13</sup> please.

<sup>14</sup> THE WITNESS: You read it  
<sup>15</sup> correctly.

<sup>16</sup> BY MR. WATTS:

<sup>17</sup> Q. Okay. Have you ever seen  
<sup>18</sup> this before today?

<sup>19</sup> A. I don't recall seeing this,  
<sup>20</sup> physically.

<sup>21</sup> Q. Now, Croen in 2002 is the  
<sup>22</sup> one study you provided in support, and  
<sup>23</sup> yet Blaxill is saying it's wrong, right?

<sup>24</sup> MS. BROWN: Objection.

<p>1 Misstates the paper.</p> <p>2 THE WITNESS: So, again, I</p> <p>3 can represent the view of the</p> <p>4 scientific community in saying</p> <p>5 that there's clearly a consensus</p> <p>6 that younger age of diagnosis,</p> <p>7 change in diagnostic criteria, and</p> <p>8 educational shifts in sort of</p> <p>9 regulatory requirements have led</p> <p>10 to an increase in the diagnosis of</p> <p>11 autism. And there are some</p> <p>12 studies that support that, and, I</p> <p>13 imagine, there are some studies</p> <p>14 that don't support that.</p> <p>15 But, overall, the totality</p> <p>16 of the evidence suggest that, in</p> <p>17 fact, that's the case.</p> <p>18 MR. WATTS: Objection.</p> <p>19 Nonresponsive.</p> <p>20 MS. BROWN: Objection.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. The one study that you cited</p> <p>23 is criticized as being wrong by Blaxill,</p> <p>24 which you have never seen before today,</p>	<p>Page 226</p>	<p>1 Kolevzon 411.)</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Have you ever seen Croen's</p> <p>4 response published in April 2003 about</p> <p>5 the criticism to her 2002 study that you</p> <p>6 cited to?</p> <p>7 A. I don't recall.</p> <p>8 Q. And if we look at --</p> <p>9 MR. WATTS: Let's go to</p> <p>10 Column 2, Eric. First page.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Says, "Blaxill et al.</p> <p>13 correctly point out that age patterns of</p> <p>14 enrollment in this service system may be</p> <p>15 substantially different for autism and</p> <p>16 idiopathic MR and that truncated</p> <p>17 follow-up for children born during the</p> <p>18 more recent study years might</p> <p>19 differentially affect the observed trends</p> <p>20 in prevalence of these two disorders over</p> <p>21 the study period. That is, not only did</p> <p>22 we underascertain autism in the later</p> <p>23 years (which we acknowledged), but we may</p> <p>24 have underascertained MR to a</p>
<p>1 right?</p>	<p>Page 227</p>	<p>Page 229</p>
<p>2 A. I don't have the</p> <p>3 opportunity --</p>		<p>1 substantially greater degree (which we</p> <p>2 did not acknowledge). Blaxill et al.</p> <p>3 assert that the observed decline in</p> <p>4 idiopathic MR could be an artifact of a</p> <p>5 relatively later average age of entry</p> <p>6 into the system for children with this</p> <p>7 disorder."</p>
<p>4 MS. BROWN: Objection to</p> <p>5 form.</p>		<p>8 Did I read that correctly?</p> <p>9 MS. BROWN: Objection.</p>
<p>6 Go ahead.</p>		<p>10 Lacks foundation.</p>
<p>7 THE WITNESS: I don't have</p> <p>8 the opportunity to evaluate</p> <p>9 Blaxill's commentary.</p>		<p>11 THE WITNESS: It's</p> <p>12 impossible for me to comment on</p> <p>13 this without reading it.</p>
<p>10 It's a commentary. It's not</p> <p>11 even peer-reviewed. I don't think</p> <p>12 it's fair for me to comment on it.</p>		<p>14 BY MR. WATTS:</p>
<p>13 BY MR. WATTS:</p>		<p>15 Q. Did I read it correctly?</p> <p>16 A. You read the words on the</p>
<p>14 Q. Okay. Well, I'll tell you</p> <p>15 what. Let's comment on Exhibit 411,</p> <p>16 which is what Croen said about her own</p> <p>17 study after reading Blaxill.</p>		<p>17 page.</p> <p>18 Q. Okay.</p>
<p>18 Exhibit 411 is entitled</p>		<p>19 A. But I can't make any kind of</p> <p>20 opinion about this.</p>
<p>19 "Response: A Response to Blaxill,</p>		<p>21 Q. Because you've never seen it</p> <p>22 before?</p>
<p>20 Baskin, and Spitzer on Croen (2002), 'The</p>		<p>23 A. If I have seen it before, I</p> <p>24 don't remember.</p>
<p>21 Changing Prevalence in Autism in</p>		
<p>22 California," by Croen and Grether.</p>		
<p>23 (Document marked for</p>		
<p>24 identification as Exhibit</p>		

<p>1 Q. You did not cite to it, did 2 you? 3 A. It was not in my citations. 4 Q. Let's go down further on the 5 column. 6 "As a way of addressing the 7 criticisms by Blaxill et al. with our 8 original dataset, we have conducted a 9 reanalysis limiting the data to children 10 who had the same number of years of 11 follow-up across all study years." 12 And if we go to the next 13 page, they conclude, based on that 14 reanalysis, that, "diagnostic 15 substitution does not appear to account 16 for the increased trend in autism 17 prevalence we observed in our original 18 analysis." 19 Did you know that they had 20 to reanalyze and retract what they said 21 before? 22 MS. BROWN: I object to the 23 reading of part of that sentence 24 as incomplete.</p>	<p>Page 230</p> <p>1 THE WITNESS: In order for 2 me to comment on this paper, I 3 need time to read it, understand 4 the methods, understand exactly 5 what she's saying needed to be 6 changed or not changed. I don't 7 have time to do that. 8 BY MR. WATTS: 9 Q. Because you've never seen it 10 before today, have you? 11 A. If I've seen it, I don't 12 remember. So in order to comment on it, 13 I need to read it carefully. 14 Q. And let's go to Page 229. 15 "We agree with Blaxill et 16 al. that the slight degree of diagnostic 17 substitution we observed in these samples 18 would not explain the dramatic increase 19 in the probability of becoming a DDS 20 client for autism by age four." 21 Did I read that correctly? 22 A. You read the words on the 23 page. 24 Nobody is implying that</p>
<p>1 THE WITNESS: There's no 2 doubt that people who were 3 previously diagnosed with 4 intellectual disability are now 5 being diagnosed with autism 6 spectrum disorder. 7 There's no doubt that prior 8 to 1990 people with autism were 9 not guaranteed educational 10 services, whereas afterwards they 11 were. 12 And there's no doubt that 13 that's some diagnostic 14 substitution going on. 15 MR. WATTS: Objection. 16 Nonresponsive. 17 MS. BROWN: Object. 18 BY MR. WATTS: 19 Q. Were you aware that Croen in 20 2003 had to acknowledge that her 21 methodology that you cited to, she did in 22 2002, was wrong? 23 MS. BROWN: I object. That 24 misstates the paper.</p>	<p>Page 231</p> <p>1 diagnostic substitution is the 2 explanation for the entire increase in 3 prevalence. It's one among many, many 4 factors. 5 Q. And, in fact, you know that 6 this same dataset was later analyzed, and 7 it was only a quarter of the increase, 8 don't you? 9 MS. BROWN: Objection. 10 Lacks foundation. 11 THE WITNESS: I'm not aware 12 of that specifically. 13 BY MR. WATTS: 14 Q. Well, in previous cases, you 15 cited to a paper by Keane and Berman, 16 haven't you? 17 A. It may be true. 18 Q. Let's go to Exhibit 479, 19 which was your report in the 20 Daniels-Feasel case, Pages 9 and 10 of 21 94. 22 At the bottom of 9, it says, 23 "For example, Keane and Berman in 2009 24 estimated that one-fourth of the observed</p>

1 increase in ASD prevalence in California  
 2 between 1992 and 2005 was a direct  
 3 consequence of diagnostic exchange  
 4 between ID and autism."

5 Do you see that, sir?

6 A. That's what it says, yes.

7 Q. So you said that in the  
 8 Daniels-Feasel case five years ago. Did  
 9 you even cite to Keane and Berman in this  
 10 report?

11 A. I don't recall whether I did  
 12 or didn't.

13 Q. Well, is Keane and Berman  
 14 even in your materials considered?

15 MS. BROWN: Objection to the  
 16 form.

17 THE WITNESS: I don't know  
 18 if it is or isn't.

19 MR. WATTS: Go to Page 30 of  
 20 Exhibit 404, which is his  
 21 materials considered list.

22 MS. BROWN: What is the  
 23 exhibit?

24 MR. WATTS: 404. His

1 materials considered list.  
 2 Page 30.

3 (Document marked for  
 4 identification as Exhibit  
 5 Kolevzon 404.)

6 BY MR. WATTS:

7 Q. If you cited to Keane and  
 8 Berman, it should be right between Entry  
 9 Number 2 and Entry Number 3, between Kim  
 10 and Kristen -- or Kirsten, right? And  
 11 it's not there.

12 A. It does not appear to be  
 13 there.

14 Q. Can you explain for the  
 15 ladies and gentlemen of the jury why, in  
 16 2018, you explained that only 25 percent  
 17 of the increase is because of this; and  
 18 in 2023, you just took out the reference  
 19 altogether, suggesting something entirely  
 20 otherwise?

21 MS. BROWN: I object. That  
 22 completely misstates these  
 23 documents.

24 THE WITNESS: So the

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1 opinions are the same. The trends  
 2 are the same. The explanation is  
 3 the same.

4 I've not included one  
 5 reference that supports that.

6 BY MR. WATTS:

7 Q. Now, if Keane and Berman  
 8 said changes in practices for  
 9 diagnostic -- diagnosing autism accounted  
 10 for only one-fourth of the observed  
 11 increase in prevalence in California,  
 12 that means three-quarters of the increase  
 13 has to be explained by other factors,  
 14 right?

15 MS. BROWN: Objection.  
 16 Lacks foundation.

17 THE WITNESS: There are many  
 18 other factors, many of which I've  
 19 described here, which include  
 20 change in diagnostic criteria,  
 21 younger age of diagnosis. And  
 22 other just cultural shifts in the  
 23 acceptance of the diagnosis.

24 BY MR. WATTS:

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1 Q. Now, have you done any  
 2 sort -- going back to 545, please.

3 Have you done any sort of  
 4 work to be able to tell the ladies and  
 5 gentlemen of the jury what the percentage  
 6 of the rate increases explained by these  
 7 five examples that you gave?

8 A. I don't think I'm able to do  
 9 that, sitting here today.

10 Q. Well --

11 A. I think it's clear that all  
 12 these factors have contributed to the  
 13 rise in prevalence, for sure.

14 Q. You can't add it up to  
 15 100 percent, can you?

16 MS. BROWN: Objection.

17 BY MR. WATTS:

18 Q. Not even close.

19 MS. BROWN: Objection to the  
 20 form.

21 THE WITNESS: So I haven't  
 22 added it up. I haven't done a  
 23 calculation.

24 The point here is that

<p style="text-align: right;">Page 238</p> <p>1 there's an enormous increase in 2 the prevalence of autism. That 3 the true increase -- the true -- 4 the true incidence has not 5 actually changed. And that much 6 of the increase in prevalence can 7 be accounted for by these factors.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Is it much of the increase, 10 some of the increase, a small percentage 11 of the increase, or all the increase?</p> <p>12 A. I'm not going to guess.</p> <p>13 Q. You don't know?</p> <p>14 MS. BROWN: Objection to the 15 form.</p> <p>16 THE WITNESS: Was that a 17 question?</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Yep.</p> <p>20 A. What's the question?</p> <p>21 Q. You don't know what 22 percentage of the increase of prevalence 23 is accounted for by these supposed 24 artifactual excuses you give versus</p>	<p style="text-align: right;">Page 240</p> <p>1 effects are, as of yet, basically 2 unknown and certainly do not 3 include acetaminophen.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Doctor, other people have 6 done the work to figure out what 7 percentage of the rate of prevalence 8 increase is attributable artifact versus 9 it's got to be environmental, haven't 10 they? You've seen that?</p> <p>11 A. So I would object to the 12 "got to be environmental" part.</p> <p>13 Q. Okay. Let me show you 14 Exhibit 418 as one example.</p> <p>15 (Document marked for 16 identification as Exhibit 17 Kolevzon 418.)</p> <p>18 BY MR. WATTS:</p> <p>19 Q. And this is an article 20 written by Martha [sic] Cone in 2009, and 21 I just want to give you a couple of 22 quotes in this article.</p> <p>23 At the bottom of the first 24 page, top of the second --</p>
<p style="text-align: right;">Page 239</p> <p>1 environmental, do you?</p> <p>2 MS. BROWN: Objection. 3 Argumentative. Lacks foundation.</p> <p>4 THE WITNESS: So I'm not 5 sure that you can use the word 6 "excuses" to characterize it, 7 first of all.</p> <p>8 I can't, at this moment, 9 assign values, because this would 10 probably require mathematical 11 modeling that I'm not able to do, 12 certainly not sitting here today.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Other people have done that 15 mathematical modeling and concluded that 16 there's got to be something else 17 environmental going on, haven't they?</p> <p>18 MS. BROWN: Objection to the 19 form. Lacks foundation.</p> <p>20 THE WITNESS: So it's clear 21 that there are potentially 22 environmental effects, because 23 heritability is not 100 percent.</p> <p>24 However, those environmental</p>	<p style="text-align: right;">Page 241</p> <p>1 MS. BROWN: Well, he's not 2 familiar with it. Let's let him 3 read it first.</p> <p>4 MR. WATTS: Split the page.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. It quotes Martha -- Irva 7 Hertz-Pannier, an epidemiology 8 professor at the University of 9 California, Davis, who led the study. 10 She says, "It's time to start looking for 11 the environmental culprits responsible 12 for the remarkable increase in the rate 13 of autism in California."</p> <p>14 This is a doctor that you 15 have published with in the past, right?</p> <p>16 MS. BROWN: Objection. 17 Lacks foundation.</p> <p>18 Can he read the article 19 first.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Sir, have you published with 22 her?</p> <p>23 A. I may have.</p> <p>24 Q. Okay. All we have to do is</p>

<p>1 type in Picciotto --  2 A. Yeah.  3 Q. -- into the file of your  4 publications, and we'll see it or not,  5 right?  6 A. Of course.  7 Q. Okay.  8 And if we go to Page 3 of 6  9 it says, "The California researchers  10 concluded that doctors are diagnosing  11 autism at a younger age because of  12 increased awareness. But that change is  13 responsible for only about a 24 percent  14 increase in children reported to be  15 autistic by the age.  16 "A shift towards younger  17 age at diagnosis was clear but not huge,'  18 the report says.  19 "Also, a shift in doctors  20 diagnosing milder cases explains another  21 56 percent. And changes in state  22 reporting of the disorder could account  23 for around a 120 percent increase.  24 "Combined, Hertz-Picciotto</p>	Page 242	1 Hertz-Picciotto, a researcher at UC Davis 2 M.I.N.D. Institute, a leading autism 3 research facility, said in an interview 4 on Thursday." 5 Do you agree with that 6 statement? 7 A. I agree with parts of that. 8 And I think that it's clear there are 9 both genetic, which makes up the vast 10 majority of the cause of autism, and 11 then, likely, some environmental risk 12 factors that we have, as of yet, not 13 reliably identified. 14 Q. Now, I want to talk to you 15 about that last statement that you just 16 made. 17 First of all, you have 18 stated in many papers and depositions 19 that autism spectrum disorder is a 20 heterogenous condition, right? 21 A. Both clinically and 22 genetically, yes. 23 Q. Okay. And for people who 24 don't talk like doctors, heterogeneity	Page 244
<p>1 says those factors 'don't get us close'  2 to the 600 to 700 percent increase in  3 diagnosed cases."</p>	Page 243	1 means what? 2 A. There are a lot of different 3 genetic causes and there are a lot of 4 different symptoms. 5 Q. Okay. A lot of different 6 environmental causes. 7 A. So, hypothetically. It's a 8 speculation at this point, but it's 9 certainly possible. 10 Q. Now, let's see if we can go 11 about it this way.	Page 245
<p>4 Did I read that correctly?  5 A. You're reading from a  6 web-based article by somebody that I've  7 never heard of, relying on information  8 that I'm not able to verify.  9 Q. You've never heard of  10 Dr. Hertz-Picciotto?</p>		12 Would you agree with me that 13 if somebody fractures their femur, the 14 fractured femur is a broken leg, right? 15 MS. BROWN: Objection. 16 Incomplete hypothetical. 17 THE WITNESS: I'm not an 18 orthopedic surgeon, but in 19 layperson's terms I would assume 20 that to be the case, yes.	
<p>11 A. No. I have never heard of  12 Marla Cone, who wrote this article.  13 Q. Okay. But the quote from  14 Hertz-Picciotto, have you ever talked to  15 her about her opinions in this regard?  16 A. I have not talked to her --  17 to her about it personally, no.  18 Q. And if we go farther down  19 the page, she's quoted again. After she  20 says they don't come close to getting us  21 to the 6- to 700 percent increase, it  22 says, "'There's genetics and there's the  23 environment. And genetics don't change  24 in such short periods of time,'</p>		18 BY MR. WATTS: 19 Q. The fractured femur is not 20 the cause of the broken leg, it's the 21 result, right?	

<p style="text-align: right;">Page 246</p> <p>1 MS. BROWN: Objection to the 2 form of the question. 3 THE WITNESS: Depends. 4 BY MR. WATTS: 5 Q. Well, if I put a bat to your 6 femur -- and I wouldn't do that to you -- 7 but if I did and I broke your femur, the 8 swinging of the bat is the cause of your 9 broken leg, right? 10 MS. BROWN: Objection to the 11 form of the question. 12 THE WITNESS: It depends. 13 BY MR. WATTS: 14 Q. Well, autism, does it result 15 from a gene change that occurs? 16 MS. BROWN: Objection. 17 Vague. 18 THE WITNESS: The only 19 commonly accepted cause of autism 20 today, as we understand it, is 21 genetic in origin. 22 MR. WATTS: Objection. 23 Nonresponsive. 24 MS. BROWN: Object.</p>	<p style="text-align: right;">Page 248</p> <p>1 on this, "It is, because I say it is." 2 Does autism ever happen 3 without a change in genetic composition 4 or gene expression? 5 MS. BROWN: Objection. 6 Calls for speculation. 7 THE WITNESS: So to the 8 state of our knowledge today, the 9 only reliable, replicated, 10 consistent causal factor in autism 11 is genetic in origin. 12 BY MR. WATTS: 13 Q. Okay. That wasn't my 14 question. 15 The change in the gene is 16 the broken leg, right? It's the 17 consequence that manifests itself through 18 clinical conditions that you call autism, 19 right? 20 MS. BROWN: Objection to the 21 form of the question. Lacks 22 foundation. Vague. 23 THE WITNESS: I think you 24 need to clarify the question.</p>
<p style="text-align: right;">Page 247</p> <p>1 BY MR. WATTS: 2 Q. Do you know what the phrase 3 "ipso dixit" means? 4 MS. BROWN: Objection to the 5 form of the question. 6 THE WITNESS: I do, but only 7 because I read a deposition 8 yesterday. 9 BY MR. WATTS: 10 Q. Okay. 11 MS. BROWN: You guys are 12 asking the same questions. 13 BY MR. WATTS: 14 Q. Did you read -- 15 A. And I took Latin in high 16 school. 17 Q. Yeah. Did you read "Alice 18 in Wonderland"? It is, because I say it 19 is. 20 A. Yes. 21 MS. BROWN: Objection to 22 form. 23 BY MR. WATTS: 24 Q. And so let's -- let's probe</p>	<p style="text-align: right;">Page 249</p> <p>1 BY MR. WATTS: 2 Q. Well, let's see if we can go 3 about it this way. 4 There are all sorts of study 5 about what causes that change in the 6 gene, right? 7 MS. BROWN: Objection. 8 Vague. 9 THE WITNESS: There are some 10 studies that explore what are 11 called epigenetic factors. Other 12 studies that very, very clearly 13 document that de novo, 14 spontaneous, what are called 15 stochastic mutations occur at the 16 time of conception. 17 BY MR. WATTS: 18 Q. Okay. So we're going to get 19 into all of that, but let's keep it on a 20 global fifth-grade level. 21 Is there any, according to 22 you, any case of autism that exists 23 without a modification of the gene of 24 some sort?</p>

1 MS. BROWN: Objection. 2 Vague. Calls for speculation. 3 THE WITNESS: The current 4 understanding is that the only 5 accepted cause of autism is 6 genetic in origin. 7 BY MR. WATTS: 8 Q. And we're almost getting 9 there. 10 When you say genetic in 11 origin, something happened to the gene -- 12 A. Yep. 13 Q. -- that altered it, right? 14 MS. BROWN: Objection. 15 Vague. 16 THE WITNESS: So by 17 "something," what do you mean? 18 BY MR. WATTS: 19 Q. Well, we're going to get 20 there. 21 But in order to have autism, 22 you have to have a changed gene from 23 what's normal, right? 24 MS. BROWN: Objection.	Page 250	1 C-L-A-S-T-O-G-E-N-I-C. 2 A. I think that's well outside 3 of my area of expertise. 4 Q. Okay. If I tell you that 5 it's a mutagenic agent that disturbs 6 normal DNA-related process, causes DNA 7 strand breakages, deletion of entire 8 chromosome sections, insertion of 9 chromosome sections, rearrangements of 10 chromosome sections, does that make a lot 11 of sense to you? 12 A. All of that make sense. 13 MS. BROWN: Objection. It 14 lacks foundation. 15 BY MR. WATTS: 16 Q. Okay. So a clastogen is 17 something that alters the genetic 18 presentation, right? 19 MS. BROWN: Object. Lacks 20 foundation. 21 THE WITNESS: So, again, I 22 don't know what a clastogen is, so 23 it's hard for me to comment about 24 it.	Page 252
1 Lacks foundation. 2 THE WITNESS: I mean, it 3 could be sort of a common 4 variation that might manifest as 5 normal in one individual, but as 6 it's inherited and interacting 7 with other genes, could be 8 pathologic in another individual. 9 BY MR. WATTS: 10 Q. See if can go about it this 11 way. 12 I do a lot of pesticide 13 work. 14 A. Yeah. 15 Q. Tell the jury what a 16 clastogen is. 17 A. I'm not a pesticide expert. 18 I have no idea. 19 Q. You are not aware of what a 20 clastogenic substance? 21 A. A what? 22 Q. A clastogenic substance. 23 A. Clastogenic? No -- 24 Q. Clastogenic,	Page 251	1 But what you asked me was, 2 did that string of words make 3 sense. 4 BY MR. WATTS: 5 Q. Yeah. And it did, didn't 6 it? 7 MS. BROWN: Let him finish. 8 THE WITNESS: Those -- those 9 string of words make sense. There 10 is the possibility. 11 BY MR. WATTS: 12 Q. Okay. There are 13 environmental products that are 14 clastogenic because they can alter the 15 general metallic presentation in the way 16 that I just described, right? 17 MS. BROWN: Objection. 18 Lacks foundation. 19 THE WITNESS: This is, 20 again, outside of my area of 21 expertise. 22 BY MR. WATTS: 23 Q. Okay. But in that 24 situation, if you have a substance, when	Page 253

Page 254	Page 256
<p>1 somebody is exposed to it, it results in  2 their change of their genetic  3 presentation. The substance caused the  4 change in the genetic presentation;  5 agreed?</p> <p>6 MS. BROWN: Object. It  7 lacks foundation. It's an  8 incomplete hypothetical, and the  9 doctor has already said it's  10 outside his area of expertise.</p> <p>11 THE WITNESS: So I'm happy  12 to talk about this as it relates  13 to autism, which I think is what  14 my area of expertise is and what I  15 came here to testify about.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Okay. I really need you to  18 answer my question.</p> <p>19 MS. BROWN: He did.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. If a pollutant, for example,  22 is a clastogen and results in an  23 interruption of the genetic presentation,  24 either deletion, insertion, the</p>	<p>1 Mr. Watts.  2 Let's behave.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Let's -- let's get boned up  5 on that before trial, okay?</p> <p>6 MS. BROWN: That's not  7 appropriate.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Now, let me ask you this.  10 When you don't know what caused the  11 change in gene presentation, you all call  12 that idiopathic autism, right?</p> <p>13 MS. BROWN: Objection to the  14 form.</p> <p>15 THE WITNESS: Idiopathic  16 autism is defined as autism where  17 we don't have an identified gene,  18 yeah.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. And over time, in your  21 testimonies in the last five years,  22 you've said in the Huddleston deposition,  23 "80 percent of the time there is no  24 specific gene identified as the cause,"</p>
<p>1 rearrangement of entire chromosome  2 sections or DNA strand break. That  3 substance is the cause of the change in  4 the genetic presentation; would you agree  5 with me?</p> <p>6 MS. BROWN: Object. It  7 lacks foundation.</p> <p>8 He already said he doesn't  9 know what a clastogen is.</p> <p>10 MR. WATTS: Well, that's  11 shocking.</p> <p>12 THE WITNESS: I don't feel  13 comfortable testifying about the  14 structural damage that pollutants  15 may or may not cause.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Okay. And part of the  18 reason, you don't even know what a  19 clastogen is, do you?</p> <p>20 A. I have never heard that  21 particular term before.</p> <p>22 Q. I am frankly shocked.</p> <p>23 MS. BROWN: That's  24 inappropriate, and you know that,</p>	<p>1 right?</p> <p>2 A. I think at the time of that  3 deposition, that was probably the correct  4 number. That number changes over time.</p> <p>5 Q. Okay. And to be fair, more  6 recently you said it's more like  7 70 percent of the time we don't know what  8 caused it, right?</p> <p>9 A. That's probably a more  10 accurate reflection of where we are  11 today.</p> <p>12 Q. Okay. And to your credit,  13 and others studying it, we're learning as  14 we go, right?</p> <p>15 A. We are in an exponential  16 phase of discovery, yes.</p> <p>17 Q. All right. Now, let's talk  18 about the concept of heritability versus  19 de novo genetic changes, okay.</p> <p>20 First of all, from the  21 standpoint of common variants, are common  22 variants, by definition, inherited  23 variants?</p> <p>24 A. Common variants are thought</p>
Page 255	Page 257

<p>1 to be inherited variants, yes.</p> <p>2 Q. Okay. And with respect to</p> <p>3 the common variants, we can use something</p> <p>4 called monozygotic twin studies to look</p> <p>5 for concordance between the two twins in</p> <p>6 terms of how often they have autism, both</p> <p>7 of them, versus one of them, right?</p> <p>8 A. That's how you define</p> <p>9 heritability, yes.</p> <p>10 Q. Okay. Now, let me give you</p> <p>11 an example of that. And we're just going</p> <p>12 to go through this step-by-step.</p> <p>13 Exhibit 438 is a paper by</p> <p>14 Gaugler that you cite in your report.</p> <p>15 A. Yeah.</p> <p>16 (Document marked for</p> <p>17 identification as Exhibit</p> <p>18 Kolevzon 438.)</p> <p>19 BY MR. WATTS:</p> <p>20 Q. And if we could go to Page 3</p> <p>21 of Exhibit 438.</p> <p>22 And Gaugler --</p> <p>23 A. Sorry, this is a press</p> <p>24 release from Mount Sinai about this</p>	<p>Page 258</p>	<p>1 places heritability at 38 percent."</p> <p>2 Do you see that?</p> <p>3 A. Yep.</p> <p>4 Q. Now, he cites to</p> <p>5 Footnote 20; is that right?</p> <p>6 A. Yeah. It's probably the</p> <p>7 Hallmayer study.</p> <p>8 Q. I'm sorry? Say what you</p> <p>9 said.</p> <p>10 A. It's probably the Hallmayer</p> <p>11 study.</p> <p>12 Q. Okay. And when was the</p> <p>13 Hallmayer study?</p> <p>14 A. Yeah. 2011.</p> <p>15 Q. Okay. And that's a study</p> <p>16 with which you are familiar?</p> <p>17 A. I am.</p> <p>18 Q. And the Hallmayer study</p> <p>19 placed the heritability of autism at</p> <p>20 38 percent, right?</p> <p>21 A. The Hallmayer study was one</p> <p>22 among 14 or 15 studies that had overblown</p> <p>23 estimates -- or underblown underestimates</p> <p>24 of heritability.</p>	<p>Page 260</p>
<p>1 paper. And all I have is a bunch of</p> <p>2 papers. I don't have the actual...</p> <p>3 MS. BROWN: Is this 438?</p> <p>4 MR. WATTS: Yeah, I think</p> <p>5 you're --</p> <p>6 MS. BROWN: I gave you 435.</p> <p>7 That's my fault. Here you go.</p> <p>8 MR. WATTS: Okay. Strike</p> <p>9 what he just said. He didn't mean</p> <p>10 it.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. I get it, you were given the</p> <p>13 wrong document.</p> <p>14 Now we're on 438, let's talk</p> <p>15 together. This is the Gaugler manuscript</p> <p>16 entitled, "Most Genetic Risks For Autism</p> <p>17 Reliance on Common Variation," and it's</p> <p>18 in the NIH Public Access author</p> <p>19 manuscript, right?</p> <p>20 A. Yes, from 2014.</p> <p>21 Q. From 2014.</p> <p>22 And I want to take you to</p> <p>23 Page 3, and part of what he says on</p> <p>24 Page 3 is "A recent, large study of twins</p>	<p>Page 259</p>	<p>1 Q. That wasn't my question. My</p> <p>2 question was, the Hallmayer study placed</p> <p>3 heritability at 38 percent, correct?</p> <p>4 A. I think that they looked at</p> <p>5 different ways of measuring, and, yes,</p> <p>6 one of the estimates was 38 percent.</p> <p>7 Q. And it's being cited by</p> <p>8 Gaugler, which is one of the papers that</p> <p>9 you cited in your report, right?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. Now, you, saying that</p> <p>12 Hallmayer was low, have more recently</p> <p>13 said that common variations contribute to</p> <p>14 about half of the autism risk, right?</p> <p>15 A. That's what it's thought of,</p> <p>16 yes.</p> <p>17 Q. Okay. So by virtue of that</p> <p>18 statement which you've said several</p> <p>19 times, to be fair to you, your position</p> <p>20 is, is that half of the risk of autism is</p> <p>21 inherited from parents; is that right?</p> <p>22 MS. BROWN: Objection.</p> <p>23 Lacks foundation.</p> <p>24 THE WITNESS: So this is</p>	<p>Page 261</p>

	Page 262	Page 264
1 complicated, because --	1	1 which one?
2 BY MR. WATTS:	2	2 MR. WATTS: Exhibit 549.
3 Q. Let me re-ask the question.	3	3 (Video played.)
4 MS. BROWN: Can we --	4	4 DR. CHUNG: You take two
5 BY MR. WATTS:	5	5 identical twins, and you ask
6 Q. I see why you're saying it's	6	6 yourself, if one twin has autism,
7 complicated. Let me see if I can go	7	7 what is the probability that the
8 about it this way.	8	8 other twin has autism? If this
9 You remember how we talked	9	9 were genetic, if it were entirely
10 about 20 or 30 percent are genes that we	10	10 genetic, what would you think that
11 know and the rest we don't know?	11	11 answer should be?
12 Did you mean to say that of	12	12 100 percent. Absolutely.
13 the genetic source that we have, half of	13	13 Is that number up there
14 that is common variation?	14	14 100 percent? Absolutely not.
15 A. About that, yes.	15	15 77 percent. Some people have
16 Q. Okay. And common variation	16	16 estimated 80 percent. But it's
17 is, in effect, inherited variation,	17	17 not 100 percent.
18 right?	18	18 So there's some difference
19 A. Yep.	19	19 that not, at least not in the
20 Q. Okay. Now I want to play	20	20 genes that happened right at the
21 you a video that I think does it pretty	21	21 time of fertilization. But
22 well from the standpoint of Dr. Chung,	22	22 there's some change, some
23 and I think there was an intention to	23	23 difference between the two of
24 play this for her on Wednesday. But I	24	24 them. That number is high,
	Page 263	Page 265
1 want to ask your thoughts about it.	1	1 though.
2 Okay. Give me just a	2	2
3 second.	3	3 So as an example, as a
4 (Document marked for	4	4 comparison, now, if you take
5 identification as Exhibit	5	5 fraternal twins, right. So these
6 Kolevzon 549.)	6	6 are cases that are like brother
7 MS. BROWN: We're playing a	7	7 and sister, but they share the
8 video for Dr. Kolevzon of	8	8 same in utero environment. They
9 Dr. Chung.	9	9 can be in the same household.
10 MR. WATTS: We absolutely	10	10 They share the same -- some of the
11 are doing that.	11	11 same postnatal factors. And if
12 MS. BROWN: All right. I'm	12	12 you look at that, they share
13 going to object as lacking	13	13 50 percent of their genomes, or
14 foundation, as I suspect	14	14 50 percent of their genetic
15 Dr. Kolevzon hasn't seen it	15	15 information. The concordance rate
16 before.	16	16 between those is 31 percent.
17 MR. WATTS: Okay. Objection	17	17 But now take as an
18 overruled. We're going to keep	18	18 interesting comparator to that,
19 going -- I'm kidding.	19	19 siblings. So these are, again,
20 BY MR. WATTS:	20	20 genetically sharing 50 percent of
21 Q. Exhibit 549. Just play the	21	21 their genetic information, but
22 video, and I'll ask your thoughts about	22	22 they don't share the same in utero
23 it.	23	23 environment. They don't
24 TRIAL TECH: I'm sorry,	24	24 necessarily share the same
		24 exposures after they are born.

<p>1 And in that particular case, it's  2 lower. Right. Statistically,  3 significantly lower, only  4 20 percent in those cases.  5 And in the general  6 population, as you've heard, it's  7 about 1 percent, or, these days, 1  8 in 59 individuals with autism.  9 So what does that tell me?  10 What that tells me is, there are  11 some genes. I don't -- doesn't  12 tell me what the genes are, but it  13 tells me genes are important in  14 that, but it's not all in the  15 genes, right.  16 Part of it is genes, part of  17 it is something else.  18 (Video playback ended.)</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Her description -- and I  21 played it because it's all very  22 compact -- about the difference in autism  23 rates between identical twins, lower in  24 fraternal twins, lower than that in</p>	<p>Page 266</p>	<p>1 BY MR. WATTS:  2 Q. Entitled, "Convergence of  3 Genes and Cellular Pathways Dysregulated  4 in Autism Spectrum Disorder," published  5 in The American Journal of Human  6 Genetics, Volume 94, Issue 5, of May 1st,  7 2014. The first author is Dalila Pinto.  8 Do you see that?  9 A. Yes.  10 Q. And if you go about halfway  11 down all the -- all the authors?  12 A. Yeah, I know. This is -- I  13 know what this is.  14 Q. Okay. There is your name,  15 correct?  16 A. Yep.  17 Q. And if we go to Page 15 of  18 43, and we highlight, it says,  19 "Inheritance data showed that 64 percent  20 of pathogenic CNVs were de novo  21 events" -- and we'll get to that in a  22 second -- "and the remaining (36 percent)  23 were inherited."  24 Do you see that?</p>	<p>Page 268</p>
<p>1 brothers and sisters, you agree with that  2 as a concept, right?</p>	<p>Page 267</p>	<p>1 A. Yes.  2 Q. Okay. Now, because you put  3 this in the same sentence --</p>	<p>Page 269</p>
<p>3 MS. BROWN: Objection.  4 THE WITNESS: Yes.</p>		<p>4 A. But --  5 Q. Let me just say, what is a  6 de novo event, first of all?</p>	
<p>5 BY MR. WATTS:  6 Q. Okay. Now, you said  7 Hallmayer was low when it said that only  8 36 percent is noninheritable, right?  9 A. 30 -- I said it was low and  10 36 percent was heritable.</p>		<p>7 A. All right. So to clarify,  8 when it says inherited here, that's  9 many -- that's among the things that are  10 considered to be heritable.</p>	
<p>11 Q. Yes, I'm sorry. Yes, I  12 misstated.</p>		<p>11 De novo just means that it  12 occurred spontaneously, so it was not  13 specifically passed on from a parent. So  14 the common variations exist in parents  15 but are not causing any clinical  16 symptoms.</p>	
<p>13 You have in a paper since  14 then said that 36 percent is inherited,  15 right?</p>		<p>17 Q. Now --  18 A. When they are inherited to  19 the child, they can interact with other  20 genes and cause clinical symptoms, which  21 is different than other heritable genetic  22 factors which can occur within the sperm  23 or the egg. So they are still  24 essentially passed on, right. They are</p>	
<p>16 MS. BROWN: Objection to  17 form.</p>			
<p>18 THE WITNESS: Say it again.</p>			
<p>19 BY MR. WATTS:</p>			
<p>20 Q. Well, let me just show it to  21 you. Exhibit 434.</p>			
<p>22 (Document marked for  23 identification as Exhibit  24 Kolevzon 434.)</p>			

<p>1 just not common variations.  2 So they can either be de  3 novo, rare variations, or even some de  4 novo, rather, rare inherited variations.  5 So this 36 percent  6 represents the universe -- a piece of the  7 universe that is considered to be  8 heritable.  9 Q. Okay. Now, here is my  10 question. I think it was about what is a  11 de novo gene mutation --  12 A. Just means spontaneously  13 occurred.  14 Q. Okay. Go back to my example  15 about the clastogenic chemical that  16 alters a gene presentation.  17 Does that go in the de novo  18 category?  19 A. Generally speak --  20 MS. BROWN: Objection to the  21 hypothetical.  22 Go ahead.  23 THE WITNESS: When it comes  24 to autism, the de novo mutations</p>	Page 270	<p>1 environmentally caused increase in risk  2 because of a gene mutation that an  3 environmental agent caused, yes or no?  4 MS. BROWN: Objection.  5 Vague. Lacks foundation.  6 THE WITNESS: So  7 heritability is defined by the  8 concordance or discordance between  9 monozygotic and dizygotic twins.  10 BY MR. WATTS:  11 Q. Done that. Now de novo.  12 A. De novo mutations in the  13 case of autism that have been identified  14 up until now occur when sperm meets egg.  15 Q. I understand when it occurs.  16 I'm saying why it's occurring.  17 A. So the current state of our  18 understanding, that these things are what  19 are called stochastic; they are random.  20 Q. So we're back to idiopathic  21 autism. You just don't know what's  22 causing it yet, is what you're saying.  23 A. No, we know what's causing  24 it. There's the gene that's causing it.</p>	Page 272
<p>1 that we've identified, that we  2 know cause autism, occur at the  3 time of conception.  4 BY MR. WATTS:  5 Q. I'm asking, if that mutation  6 which results from environmental  7 exposure -- I'll give you that it happens  8 at the time of conception -- is that in  9 the de novo category?  10 A. Can you repeat the question?  11 Q. When you talk about de novo  12 mutations, those are nonheritable, right?  13 A. No. De novo mutations are  14 heritable.  15 Q. Well, what about ones from  16 the environment, are they de novo?  17 MS. BROWN: I object to the  18 question. It doesn't make sense.  19 THE WITNESS: I don't know  20 what you mean by ones from the  21 environment.  22 BY MR. WATTS:  23 Q. Well, when you use the  24 phrase "de novo," does it include</p>	<p>1 Q. Well --  2 A. Why does the gene mutate?  3 We don't necessarily know.  4 Q. But there's strong evidence  5 that nonheritable, pre- and perinatal  6 events are likely to also have an  7 etiological role?  8 MS. BROWN: In autism?  9 MR. WATTS: Yep.  10 THE WITNESS: So in autism,  11 because the heritability is not  12 100 percent, there are likely  13 environmental events that play a  14 role, they just are, as of yet,  15 unidentified.  16 And bringing it back to this  17 case, when you look at the  18 literature around acetaminophen,  19 it's certainly not considered a  20 risk factor.  21 BY MR. WATTS:  22 Q. Well, look, let's go back to  23 2011, before you were ever hired in this  24 case, and let's look at the first edition</p>	Page 271	Page 273

<p>1 of the Textbook of Autism Spectrum 2 Disorders.</p> <p>3 MR. WATTS: Exhibit 422.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. And if we go to Page 239.</p> <p>6 You, Reichenberg, Gross and Susser write, 7 "Parental and Perinatal Risk Factors for 8 Autism."</p> <p>9 And the very second sentence 10 in your book chapter is, "Yet there is 11 strong evidence that nonheritable pre- or 12 perinatal events are also likely to have 13 an etiological role," right?</p> <p>14 A. Because heritability is not 15 100 percent, there are going to be 16 nonheritable events that likely play an 17 etiological role.</p> <p>18 Q. And in the book chapter that 19 didn't make its way into your CV, you 20 said the same thing 11 years later in the 21 second edition, right?</p> <p>22 MS. BROWN: Objection to the 23 form of the question.</p> <p>24 THE WITNESS: I'm sure I</p>	<p>Page 274</p> <p>1 Q. And that sentence doesn't 2 use the word "theoretically" at all, does 3 it? It says there is strong evidence 4 that it's true.</p> <p>5 A. Well, it's -- there's strong 6 evidence it's true, based on twin studies 7 that show that heritability is not 8 100 percent.</p> <p>9 Q. Now, Doctor, I want to play 10 you another video from Dr. Chung, 11 Exhibit 549, and get your comment on it.</p> <p>12 MS. BROWN: And same 13 objections to the Dr. Chung 14 videos.</p> <p>15 And could we also, Counsel, 16 identify them for the record?</p> <p>17 Dates, where they came from?</p> <p>18 MR. WATTS: Sure. This one 19 is December 16, 2018.</p> <p>20 MS. BROWN: Okay. And for 21 the other one, we can go back and 22 fill it in, please.</p> <p>23 MR. WATTS: Yeah, I'll do 24 that.</p>
<p>1 said something similar, because it 2 continues to be true.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. And an etiological role 5 means what?</p> <p>6 A. Causal role.</p> <p>7 Q. Okay. So a prenatal event 8 means what?</p> <p>9 A. Prenatal just means before 10 the time of birth.</p> <p>11 Q. And perinatal means during 12 the time of birth, right?</p> <p>13 A. Birth and delivery, yeah.</p> <p>14 Q. And so, yet, there is strong 15 evidence that nonheritable 16 before-the-time-of-birth or 17 during-the-time-of-birth events are 18 likely to also have a causal role.</p> <p>19 That's what that sentence 20 means, right?</p> <p>21 A. So, theoretically, because 22 heritability is not 100 percent, there 23 are likely going to be prenatal and 24 perinatal events that play a causal role.</p>	<p>Page 275</p> <p>1 MS. BROWN: Thank you. (Video played.)</p> <p>2 DR. CHUNG: Two identical 3 twins, and you ask yourself if one 4 twin has autism, what's the 5 probability that the other twin 6 has autism? If this were genetic, 7 if it were entirely genetic, what 8 would you think that answer should 9 be --</p> <p>10 MS. BROWN: We just watched 11 this one.</p> <p>12 THE WITNESS: Same clip.</p> <p>13 DR. CHUNG: 100 percent.</p> <p>14 Absolutely. Is that number 100 15 percent? Absolutely not. 77 16 percent. Some people have 17 estimated 80 percent. But --</p> <p>18 (Video playback stopped.)</p> <p>19 MR. WATTS: Stop. Had a 20 glitch. Sorry.</p> <p>21 548, please.</p> <p>22 (Document marked for 23 identification as Exhibit</p>

<sup>1</sup> Kolevzon 548.)  
<sup>2</sup> (Video played.)  
<sup>3</sup> DR. CHUNG: The bottom line  
<sup>4</sup> is, for any one person that I see  
<sup>5</sup> in terms of identifying a cause, I  
<sup>6</sup> can come up with the answer these  
<sup>7</sup> days about 20 percent of the time.  
<sup>8</sup> That's the good news/bad news.  
<sup>9</sup> So you can now -- that's the  
<sup>10</sup> take-home message. You can go  
<sup>11</sup> home now if you're bored.

<sup>12</sup> So with that, though, that  
<sup>13</sup> means 80 percent of the time we  
<sup>14</sup> have not yet figured this out.  
<sup>15</sup> It's not all about the genes, but  
<sup>16</sup> for the majority of individuals  
<sup>17</sup> where we can pin it down to one  
<sup>18</sup> thing, it is in the genes.

<sup>19</sup> But we know there are other  
<sup>20</sup> factors from epidemiological  
<sup>21</sup> studies, which I won't have time  
<sup>22</sup> to talk about. We do know that  
<sup>23</sup> there are infections during  
<sup>24</sup> pregnancy. We know there are

<sup>1</sup> infections in early childhood that  
<sup>2</sup> can cause this. Whether it's the  
<sup>3</sup> virus itself, or whatever might be  
<sup>4</sup> infected; whether it's some of the  
<sup>5</sup> inflammatory response or what we  
<sup>6</sup> do to fight the infection. It  
<sup>7</sup> could be some of both.

<sup>8</sup> There may be things in our  
<sup>9</sup> environment, so things that we're  
<sup>10</sup> exposed to. Things like  
<sup>11</sup> pollutants, chemicals, things that  
<sup>12</sup> are changing in that.

<sup>13</sup> But we don't know all the  
<sup>14</sup> answers, is the bottom line.

<sup>15</sup> (Video playback ended.)

<sup>16</sup> BY MR. WATTS:

<sup>17</sup> Q. Do you agree with what she  
<sup>18</sup> says?

<sup>19</sup> A. You need to be more  
<sup>20</sup> specific.

<sup>21</sup> Q. Okay. Things like  
<sup>22</sup> environmental pollutants. Do you agree  
<sup>23</sup> with her?

<sup>24</sup> A. I don't think it's been

<sup>1</sup> established that environmental pollutants  
<sup>2</sup> are a cause of autism, no.

<sup>3</sup> Q. Let's -- let's go to the  
<sup>4</sup> identification of autism genes.

<sup>5</sup> Inherited or common variants  
<sup>6</sup> account for 50 percent of the genetic  
<sup>7</sup> risk. We've established that, right?

<sup>8</sup> A. Yes.

<sup>9</sup> Q. Give us examples of the  
<sup>10</sup> common variants that have been  
<sup>11</sup> identified.

<sup>12</sup> A. So off the top of my head, I  
<sup>13</sup> don't have a lot of good examples of  
<sup>14</sup> common variations. There's probably, you  
<sup>15</sup> know, five or six of them. The problem  
<sup>16</sup> is that they are common, and they have a  
<sup>17</sup> very weak effect. And that it's only  
<sup>18</sup> through interacting with many, many of  
<sup>19</sup> them are you going to produce sort of a  
<sup>20</sup> perfect storm of autism.

<sup>21</sup> Q. You said something I agree  
<sup>22</sup> with, that they have a weak effect. Why  
<sup>23</sup> is it that common variants have a weak  
<sup>24</sup> effect, whereas de novo variants are more

<sup>1</sup> powerful?

<sup>2</sup> A. Because common variants that  
<sup>3</sup> are inherited from parents are not having  
<sup>4</sup> any kind of penetration. They are not  
<sup>5</sup> creating an actual symptom. They are  
<sup>6</sup> sort of impairing, perhaps, the way that  
<sup>7</sup> a protein functions. But in and of  
<sup>8</sup> itself, it is not enough to produce,  
<sup>9</sup> like, a clinical picture.

<sup>10</sup> When it's inherited and then  
<sup>11</sup> combined with many, many other common  
<sup>12</sup> variants, that's when it occurs.

<sup>13</sup> Q. Okay. So a common variant  
<sup>14</sup> by itself is weak and hard to clinically  
<sup>15</sup> diagnose, agreed?

<sup>16</sup> A. In general that's the case.

<sup>17</sup> Q. Common variants become  
<sup>18</sup> clinically diagnosable when they are  
<sup>19</sup> inherited, when they are working together  
<sup>20</sup> with other common variants?

<sup>21</sup> A. Yes. But even then we have  
<sup>22</sup> not been super successful at identifying  
<sup>23</sup> common variants.

<sup>24</sup> Q. And so common variants that

<p>1 are interacting with de novo variants,  2 does that present, clinically, in a way  3 that you have a more powerful or more  4 easily diagnosable case of ASD?</p> <p>5 MS. BROWN: Objection to the  6 form.</p> <p>7 THE WITNESS: That's sort of  8 a hypothetical. I think when you  9 have rare de novo variants that  10 are highly pathogenic, and in a  11 single gene are sufficient to  12 cause autism, then you have common  13 variations that require  14 interaction with multiple other  15 genes in order to produce a  16 clinical picture.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Now, this is my last Chung  19 video, I promise. Exhibit 550.  20 (Document marked for  21 identification as Exhibit  22 Kolevzon 550.)</p> <p>23 MR. WATTS: This one is from  24 April 2nd of 2021.</p>	<p>Page 282</p> <p>1 the mother's sample that was sent  2 in, it's not something in the  3 father's sample that was sent in  4 that we see, then it seems to have  5 started first with the individual  6 with autism.</p> <p>7 So that's genetic, but it  8 was not inherited.</p> <p>9 So it didn't come down from  10 mom or dad. But it is genetic in  11 the individual with autism.</p> <p>12 (Video playback ended.)</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Do you agree with that?</p> <p>15 A. Yes.</p> <p>16 Q. Okay.</p> <p>17 A. It's still different than  18 the heritability, though.</p> <p>19 Q. Well, she says it's genetic  20 but not inherited. That's what she said,  21 right?</p> <p>22 A. It wasn't passed from the  23 parent to the child, but it occurred in  24 the parents's gamete, the sperm or the</p>
<p>1 (Video played.)</p> <p>2 DR. CHUNG: So there are two  3 distinctly different -- when I  4 think of genetics of autism, there  5 are sort of two different buckets  6 that I think of. So within -- and  7 let me try and point this out.</p> <p>8 So we return about -- to  9 about 10 percent of SPARK families  10 currently, about 10 percent of you  11 have a genetic finding that we see  12 that we're very certain is the --  13 a major contributor to the autism  14 in your family. And so we return  15 that information to you.</p> <p>16 For most of the individuals,  17 not all, but most of the  18 individuals that we currently  19 recognize that in, those are  20 genetic changes that are de novo,  21 or new, in the individual with  22 autism.</p> <p>23 And so what I mean by that  24 is it's not something that's in</p>	<p>Page 283</p> <p>1 egg.</p> <p>2 Q. Now, on Page 23,  3 Paragraph 51, of your report, Exhibit  4 403, you say, "Rare genetic variants are  5 often de novo (i.e., not inherited from  6 the mother or the father), highly  7 penetrant (i.e., expressing associated  8 trait), and considered to be causal to  9 autism spectrum disorder," right?</p> <p>10 A. That's correct.</p> <p>11 Q. Okay. And then one last  12 thing with respect to Chung, PowerPoint  13 Exhibit 568, on April 25, 2023, Slide 29.</p> <p>14 She says, "De novo variants  15 have a strong effect on the presence of  16 autism." Whereas "common/mild effect  17 variants have milder effects."</p> <p>18 Do you agree with that?</p> <p>19 A. It depends, but, in general,  20 that's a true statement.</p> <p>21 Q. Do you know why it's true?</p> <p>22 A. I think we've gone over  23 this.</p> <p>24 Q. And why is it true again?</p>

<p>1 A. So common variations by  2 themselves don't produce clinical  3 effects, and only when they are  4 interacting with many other common  5 variations do you actually see, like, a  6 threshold met, essentially.</p> <p>7 Q. Okay.</p> <p>8 A. And they're -- they are  9 common.</p> <p>10 Q. Okay. And they are common,  11 and there's five or six of them, and you  12 just can't name any of them today?</p> <p>13 A. No. There's hundreds, if  14 not thousands of them.</p> <p>15 Q. I'm talking about common  16 variants.</p> <p>17 A. There's hundreds --</p> <p>18 Q. You said -- you said three  19 minutes ago there were five or six of  20 them.</p> <p>21 A. No. What I said is there  22 are five or six that have been reliably  23 identified as of yet, based on the  24 current state of science. But there are</p>	<p>Page 286</p>	<p>1 genes for autism"?</p> <p>2 A. No.</p> <p>3 Q. Look at the screen.</p> <p>4 MS. BROWN: Where is it in  5 the article?</p> <p>6 THE WITNESS: What page are  7 we on?</p> <p>8 MR. WATTS: We're on 44 --</p> <p>9 MS. BROWN: Conclusions.</p> <p>10 MR. WATTS: We're on  11 Page 331.</p> <p>12 THE WITNESS: 331.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. "To date, there are no known  15 genes for autism."</p> <p>16 Do you see that?</p> <p>17 A. Yeah. Even in 2014, I would  18 disagree with that statement.</p> <p>19 Q. Okay. But this is in 2007.</p> <p>20 A. Fragile X.</p> <p>21 Q. Okay. Now, let's go forward  22 in time. In 2011, in your first edition  23 of the Hollander book, Exhibit 422,  24 Page 244.</p>	<p>Page 288</p>
<p>1 likely hundreds, if not thousands, of  2 common variants that contribute to  3 autism.</p> <p>4 Q. Okay. As to the ones that  5 we've identified, five or six, can you  6 list any of them?</p> <p>7 A. Not off the top of my head,  8 no.</p> <p>9 Q. Not one?</p> <p>10 A. No, I don't...</p> <p>11 Q. Okay. Now, let's talk about  12 the last 15 years of science.</p> <p>13 Back in 2007, in  14 Exhibit 414, you said, "To date there are  15 no known genes for autism."</p> <p>16 A. Sorry. Can you -- where are  17 we?</p> <p>18 Q. Yeah. Exhibit 414, Page  19 331. And I'm talking about the time  20 between then and now. And I understand  21 why, I just wanted to start with a  22 baseline.</p> <p>23 Do you see that statement on  24 your paper in 2007, "There are no known</p>	<p>Page 287</p>	<p>1 MS. BROWN: This one.</p> <p>2 THE WITNESS: 442? Sorry.</p> <p>3 442?</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Yep.</p> <p>6 No. Exhibit 422, Page 244,  7 and there it is on the screen.</p> <p>8 You say, again, in 2011,  9 "Because currently there are no known" --</p> <p>10 "there are no established risk genes for  11 autism."</p> <p>12 Do you see that?</p> <p>13 A. Yeah. I see that on the  14 page, yeah.</p> <p>15 Q. Okay. And then in 2013, if  16 we can go to Exhibit 430.</p> <p>17 (Document marked for  18 identification as Exhibit  19 Kolevzon 430.)</p> <p>20 BY MR. WATTS:</p> <p>21 Q. In the book, Neurobiology of  22 Mental Illness, Fourth Edition, edited by  23 Charney, published in 2013, you were the  24 first author in a book chapter, 77?</p>	<p>Page 289</p>

<p>1 A. Yep.</p> <p>2 Q. Entitled "Autism Spectrum</p> <p>3 Disorders"?</p> <p>4 A. Yes.</p> <p>5 Q. And if we go to Page 1027 of</p> <p>6 that. The upper right-hand corner.</p> <p>7 The bottom of the last</p> <p>8 sentence in the upper right-hand corner,</p> <p>9 it says, "One important conclusion from</p> <p>10 the empirical and theoretical data is</p> <p>11 that many, and even most, of the</p> <p>12 candidate gene association studies</p> <p>13 published in autism spectrum disorder are</p> <p>14 very likely false-positive findings."</p> <p>15 A. Mm-hmm.</p> <p>16 Q. If you could, explain why</p> <p>17 that's true.</p> <p>18 A. So I think that when you</p> <p>19 look at, like, these snips that are</p> <p>20 common and have weak effects, and you use</p> <p>21 things like linkage disequilibrium</p> <p>22 studies and see that they are more</p> <p>23 prominent in people with autism, they</p> <p>24 don't hold up in larger datasets. So you</p>	Page 290	<p>1 better, called exome sequencing, right?</p> <p>2 A. Right.</p> <p>3 Q. And beginning around 2013,</p> <p>4 that would be kind of the next generation</p> <p>5 of higher resolution testing, right?</p> <p>6 A. Yes.</p> <p>7 Q. And that got the technology</p> <p>8 even better, where you can see more than</p> <p>9 you could with just microsatellite arrays,</p> <p>10 right?</p> <p>11 A. Generally that's true.</p> <p>12 Q. Okay. We've got other</p> <p>13 techniques since then. I mean, in the</p> <p>14 earlier says you had karyotyping, right?</p> <p>15 A. True.</p> <p>16 Q. Then you had high-resolution</p> <p>17 karyotyping, right? Yes?</p> <p>18 A. Yes.</p> <p>19 Q. And then you had something</p> <p>20 called FISH, fluorescent in situ</p> <p>21 hybridization.</p> <p>22 A. Yes.</p> <p>23 Q. And then you had the</p> <p>24 chromosomal microwave beginning about</p>	Page 292
<p>1 just get spurious effects.</p> <p>2 Q. Okay.</p> <p>3 A. Which is totally in contrast</p> <p>4 with the rare variants.</p> <p>5 Q. Now, since 2007, the</p> <p>6 technology available to you to be able to</p> <p>7 look into the DNA and the gene expression</p> <p>8 has exponentially improved, agreed?</p> <p>9 A. The technology and the</p> <p>10 analytic methods, yes.</p> <p>11 Q. Okay. So let's talk about</p> <p>12 the technology first.</p> <p>13 Since about 2007 you all</p> <p>14 have used chromosomal microarrays,</p> <p>15 correct?</p> <p>16 A. Yes.</p> <p>17 Q. And that allowed you to see</p> <p>18 the deletion or the duplication or the</p> <p>19 reordering of genetic code, right?</p> <p>20 A. So, yeah, to a certain</p> <p>21 extent of resolution, depending on how</p> <p>22 many probes, yes, that's basically true.</p> <p>23 Q. Okay. And in about</p> <p>24 2013-'14, you've got something even</p>	Page 291	<p>1 2007?</p> <p>2 A. Yes.</p> <p>3 Q. And then now we have</p> <p>4 something called WES, what is that?</p> <p>5 A. Whole exome sequencing.</p> <p>6 Q. Okay. And even today, with</p> <p>7 all that technology, each of these rare</p> <p>8 variants account for only about 1 percent</p> <p>9 of autism or less, right?</p> <p>10 A. So given rare variant,</p> <p>11 probably only accounts for 1 to 2 percent</p> <p>12 in a given case.</p> <p>13 Q. Okay.</p> <p>14 A. When you add up all the rare</p> <p>15 variants, it accounts for much more.</p> <p>16 Q. Okay. Let's talk about</p> <p>17 Exhibit 522. This is a video that you</p> <p>18 gave. It's on YouTube, and I will tell</p> <p>19 you it's undated. I couldn't find the</p> <p>20 date.</p> <p>21 But let me just play it and</p> <p>22 ask whether you still agree with it.</p> <p>23 Maybe you can tell me when it was.</p> <p>24 (Document marked for</p>	Page 293

<p>1 identification as Exhibit 2 Kolevzon 522.) 3 (Video played.) 4 "DR. KOLEVZON: To date all 5 the genetic defects reliably 6 identified to cause autism are 7 rare variants, each accounting for 8 only about 1 percent of autism or 9 less. 10 However, when these rare 11 genetic defects are present, they 12 are always associated with 13 clinical symptoms, which more 14 often than not include autism." 15 (Video playback ended.) 16 BY MR. WATTS: 17 Q. Okay. So is that still true 18 today, that even the most common rare 19 variant is about 1 percent of the total 20 risk for autism? 21 A. So 1 to 2 percent. That's 22 probably true. 23 Q. Okay. Let's talk about some 24 of the more spoken of rare variants.</p>	Page 294	<p>1 MR. WATTS: That's a great 2 example. 3 BY MR. WATTS: 4 Q. Keep going. 5 A. Fragile X syndrome is 6 essentially inherited from mothers. 7 Q. Have you looked at any 8 epidemiological work on fragile X 9 syndrome? 10 A. I did not investigate that 11 specific question today. 12 Q. Let me put up Exhibit 547, 13 just to give you an example. One of 14 many. 15 (Document marked for 16 identification as Exhibit 17 Kolevzon 547.) 18 BY MR. WATTS: 19 Q. There's a lot of work's been 20 done on what causes fragile X syndrome? 21 A. Well, it's CGG repeats, 22 inherited from a parent. 23 Q. And let -- let's use -- 24 MR. WATTS: Objection.</p>	Page 296
<p>1 Fragile X syndrome is a rare 2 variant, right? 3 A. Right. 4 Q. It's caused by mutations in 5 the FMR1 gene that results in the loss of 6 the FMR protein, which is critical for 7 brain development, right? 8 A. Yes. 9 Q. You have testified that it's 10 the most commonly known rare variant 11 cause of autism spectrum disorder, right? 12 A. I think that that was 13 probably old testimony. 14 Q. Okay. 15 A. But it's certainly among the 16 most commonly known. 17 Q. Now let's take fragile X 18 syndrome and call it our broken leg. 19 Do you know what the 20 epidemiological research has demonstrated 21 causes fragile X syndrome? 22 MS. BROWN: I'm just going 23 to object to the hypothetical 24 about the leg.</p>	Page 295	<p>1 Nonresponsive. 2 MS. BROWN: Object. 3 I don't have 547, I don't 4 think. Oh, wait. 5 MR. WATTS: I'm pretty sure 6 you do. It's got my handwriting 7 on it, on the back. 8 MS. BROWN: Well, we go from 9 546 to 548. Let me try the other 10 box. 11 MR. WATTS: Here, take mine. 12 Give it back, though. 13 MS. BROWN: Oh, hold on. 14 546 is 547. Got it. 15 MR. WATTS: We're good. 16 MS. BROWN: We got it. 17 BY MR. WATTS: 18 Q. Okay. This is a study by 19 Saldarriaga. "Increased severity of 20 fragile X spectrum disorders in the 21 agricultural community of Ricaurte, 22 Columbia." 23 A. Hold on. Let me just read 24 it for a second.</p>	Page 297

<p>1 Q. Do you see in the abstract  2 they said, "We found an increased  3 frequency and severity of symptoms of  4 fragile X spectrum disorders, which might  5 be related to the vulnerability of the  6 FMR1 premutation carriers to higher  7 exposure to neurotoxic pesticides in this  8 rural community"?</p> <p>9 MS. BROWN: Object as  10 lacking foundation.</p> <p>11 THE WITNESS: So these  12 are -- these are not people with  13 fragile X syndrome. These are  14 premutation carriers. These are  15 the parents that when you pass on,  16 it becomes a full mutation.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Did you cite -- I'm sorry.</p> <p>19 A. And then you have fragile X  20 syndrome.</p> <p>21 Q. Did you cite to any studies  22 that analyze whether the prevalence of  23 fragile X syndrome was higher in areas  24 with pesticide exposure than not?</p>	<p>Page 298</p> <p>1 THE WITNESS: So I have not.  2 BY MR. WATTS:  3 Q. Okay.  4 A. But this -- this particular  5 study doesn't necessarily suggest that.  6 Q. Let's go to a different one,  7 Phelan-McDermid syndrome. You've studied  8 that in SHANK3 mice a lot, right?  9 A. I've spent a lot of time  10 studying Phelan-McDermid syndrome, yes.  11 Q. You began studying in about  12 2009?  13 A. Sounds about right.  14 Q. You've looked at different  15 pathway activity, hoping to either  16 inhibit or decrease the activation so you  17 can have an effect on the phenotype,  18 right?  19 A. I collaborate with people  20 that do that on the preclinical trial,  21 and I do clinical trials in kids, yes.  22 Q. And you use SHANK3. You are  23 using mice, right?  24 A. I don't work with mice</p>
<p>1 MS. BROWN: Objection.  2 Assumes facts. Lacks foundation.</p> <p>3 THE WITNESS: My task here  4 was to evaluate the relationship  5 between acetaminophen used during  6 pregnancy and autism, not fragile  7 X syndrome.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Yeah, but you said it was  10 genetic, not environmental. Have you  11 looked at anything to say whether it's  12 environmental or not?</p> <p>13 MS. BROWN: Object to the  14 form of the question.</p> <p>15 THE WITNESS: Can you repeat  16 the question?</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Have you looked at any  19 studies that have analyzed whether the  20 prevalence of fragile X syndrome is based  21 on exposure to things like pesticides or  22 other environmental toxicants?</p> <p>23 MS. BROWN: Objection to the  24 form.</p>	<p>Page 299</p> <p>1 myself. I collaborate with basic  2 scientists who do.</p> <p>3 Q. Yeah. Let me show a video,  4 Exhibit 472, just as an example.  5 (Document marked for  6 identification as Exhibit  7 Kolevzon 472.)  8 (Video played.)</p> <p>9 DR. KOLEVZON: You can  10 actually stimulate mice with  11 the missing copies of the SHANK3  12 gene in this case where you  13 basically ring, like, a very loud  14 bell and you can induce a seizure.  15 These are called audiogenic  16 seizures. And, remarkably, all of  17 these phenotypes were rescued  18 under the influence of this drug  19 AMO-1.</p> <p>20 Okay. And so for us, that  21 was, like, you know, kind of an  22 important sort of proof of  23 concept, that there could be some  24 real relevance to some kids with</p>

<p>1        Phelan-McDermid syndrome.  2                    (Video playback ended.)  3 BY MR. WATTS:  4        Q. That's your voice, right?  5        A. Yeah.  6        Q. Okay. Phelan-McDermid  7 syndrome also goes by SHANK3 deletion  8 syndrome, right? It's the same thing?  9        A. It's -- they're -- yeah. I  10 mean, it's complicated. But sort of.  11       Q. If you want to get really in  12 the weeds, it's the 22q13.3 deletion  13 syndrome?  14       A. You can have any deficiency,  15 or what's called haploinsufficiency of  16 SHANK3, gives you the diagnosis of  17 Phelan-McDermid syndrome. That can be  18 through deletions, or it can be through  19 single base para-sequence variants.  20       Q. Sure. But it's all about a  21 loss of a small piece of what,  22 Chromosome 22?  23       A. Small or large, yeah.  24       Q. Okay. And Phelan-McDermid</p>	Page 302	<p>1       interested in any studies that you  2 have to show me that the  3 prevalence of Phelan-McDermid  4 syndrome increases with  5 environmental exposures.  6 BY MR. WATTS:  7       Q. I know you desire that. I'm  8 asking, before you showed up here, have  9 you bothered to look?  10       MS. BROWN: Well, that's  11 argumentative. He answered your  12 question, and he'll answer it  13 again.  14       Go ahead, Doctor.  15       THE WITNESS: I've looked at  16 every paper that has ever come out  17 with Phelan-McDermid syndrome as  18 it relates to clinical features.  19       It's possible --  20 BY MR. WATTS:  21       Q. What about etiology?  22       MS. BROWN: Let him finish.  23       THE WITNESS: Also, the  24 etiology of Phelan-McDermid</p>	Page 304
<p>1 or SHANK3 is about one-half to 1 percent  2 of the rare variant autism cases, right?  3       A. Probably up to 2 percent  4 when you include intellectual disability,  5 but yes.  6       Q. And have you read any  7 studies with respect to the relationship  8 between environmental exposures and the  9 prevalence of Phelan-McDermid syndrome?  10       MS. BROWN: Objection.  11       Assumes facts. Lacks foundation.</p>	Page 303	<p>1       syndrome is SHANK3  2       haploinsufficiency.  3 BY MR. WATTS:  4       Q. Broken leg?  5       A. Excuse me? Broken leg?  6       Q. We've got a fractured femur  7 that caused the broken leg again.  8       MS. BROWN: Again with the  9 leg. I'm going to continue to  10 object to the leg.  11       THE WITNESS: So -- yeah,  12 the leg is an interesting analogy.  13 I mean, let's think about the leg  14 for a second.  15       If you have Phelan-McDermid  16 syndrome -- and I'll pull your  17 analogies together just for fun.  18 BY MR. WATTS:  19       Q. Cool.  20       A. And you are more prone to  21 hyperflexibility, and you find yourselves  22 in situations where you may have a  23 fracture because you have fallen, because  24 you've got motor skill deficits. And so</p>	Page 305
<p>1       But the Phelan-McDermid  2 syndrome is a de novo spontaneous  3 mutation that occurs at the time  4 of conception.  5 BY MR. WATTS:  6       Q. What was the answer to my  7 question?  8       MS. BROWN: He answered it.  9       THE WITNESS: I said I'd be</p>	Page 303		

<p>1 in that case, it's not the bat, it's the  2 Phelan-McDermid syndrome that caused the  3 fracture.</p> <p>4 Q. Let's look at 546, a paper  5 by Boccuto.</p> <p>6 A. Boccuto?</p> <p>7 (Document marked for  8 identification as Exhibit  9 Kolevzon 546.)</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Yeah. Are you ready?</p> <p>12 A. Yes.</p> <p>13 Q. "Phenotypic Variability in  14 Phelan-McDermid Syndrome and Its Putative  15 Link to Environmental Factors."  16 Have you seen this before?</p> <p>17 A. Yes.</p> <p>18 Q. Was it listed in your  19 materials considered in this case?</p> <p>20 A. I don't know if it was or  21 wasn't.</p> <p>22 Q. Okay. If we could go to  23 Table 1, it's got "Possible contributions  24 of environmental factors to</p>	<p>Page 306</p> <p>1 established. It's due to SHANK3  2 haploinsufficiency.</p> <p>3 Q. Broken leg.</p> <p>4 MS. BROWN: Again, with the  5 broken leg. I'm going to object.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Go ahead.</p> <p>8 A. And my role is always to try  9 to develop ways to support or treat  10 children.</p> <p>11 Q. Okay. Let me give you some  12 kudos and play Exhibit 469 for a second.</p> <p>13 It's one of your videos, and I just want  14 to put it in the record.</p> <p>15 MS. BROWN: Can you give us  16 the date.</p> <p>17 MR. WATTS: February 28,  18 2018.</p> <p>19 (Document marked for  20 identification as Exhibit  21 Kolevzon 469.)</p> <p>22 (Video played.)</p> <p>23 DR. KOLEVZON: We create  24 different kinds of model systems,</p>
<p>1 Phelan-Mcdermid syndrome clinical  2 presentation."</p> <p>3 And it lists different  4 environmental factors, including drugs  5 and inflammations -- inflammation, and  6 the like, right?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And it's got a bunch  9 of references that talk about those  10 contributions of environmental factors to  11 Phelan-McDermid syndrome, right?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. Doctor, with respect  14 to your work with SHANK3 mice, are you  15 doing work with respect to etiology or  16 cause of the syndrome as opposed to treat  17 it, in fairness to you?</p> <p>18 A. So by point of  19 clarification, I don't work with the  20 mice. I collaborate with people who work  21 with mice.</p> <p>22 Q. Fair enough.</p> <p>23 A. The etiology of  24 Phelan-McDermid syndrome has been</p>	<p>Page 307</p> <p>1 whether it's mice models or rat  2 models or even now, neurons  3 derived from humans, and using  4 iPSCs, or pluripotent stem cells,  5 as it's called.</p> <p>6 We use those models to  7 really better understand the  8 pathophysiology, and in this case,  9 what's going wrong in terms of the  10 nerve cell connections when SHANK3  11 is -- when there's loss of  12 function of SHANK3.</p> <p>13 Then we can test specific  14 medicines in the models. And then  15 if those medicines work at  16 reversing either the behavior of  17 the models or the way the nerve  18 cells connect, for example, then  19 we bring those medicines to  20 clinical trials in kids.</p> <p>21 And that's the pathway that  22 we've been following.</p> <p>23 (Video playback ended.)</p> <p>24 BY MR. WATTS:</p>

<p>1 Q. Is that one of the videos 2 you did? 3 A. Yes. 4 Q. Okay. So you're working 5 with people who are using the SHANK3 mice 6 to help try to come up with a clinical 7 treatment for Phelan-McDermid syndrome? 8 A. Yes. If you fast-forward to 9 the end of the presentation, you'll see 10 the acknowledgments, which includes the 11 whole team. 12 Q. Yep. Okay. Let's go to 13 IGF-1. That's insulin-like growth 14 factor 1, right? 15 A. Yes. 16 Q. It's a hormone that's 17 similar in molecular structure to 18 insulin, right? 19 A. Similar, yeah. 20 Q. It's produced primarily by 21 the liver? 22 A. Correct. 23 Q. It's characterized by the 24 association of intrauterine growth</p>	Page 310	<p>1 for. I was using it for Phelan-McDermid 2 syndrome. 3 And I'm using it to take 4 advantage of the mechanism which is to 5 produce growth. 6 Q. I understand. But my 7 question is, is placental dysfunction a 8 cause of IGF-1 deficiency? 9 A. I'm not an expert in IGF-1 10 deficiency. 11 Q. Okay. During gestation, a 12 placenta is one of the major sources of 13 IGF-1, right? 14 MS. BROWN: Object to the 15 form. 16 THE WITNESS: I'm not an 17 expert in IGF-1 deficiency. 18 BY MR. WATTS: 19 Q. Okay. Does DNA methylation 20 play a critical role in placental 21 development? 22 A. I'm not an expert in 23 placental development or IGF-1 24 deficiency.</p>	Page 312
<p>1 retardation with intellectual deficit, 2 right? 3 A. Sorry, can you repeat that? 4 Q. It's characterized by the 5 association of intrauterine growth 6 retardation with intellectual deficit? 7 A. That's taken out of context. 8 It is a growth factor that's critical for 9 brain development. 10 Q. Okay. It's caused by a 11 deregulated lipid metabolism? 12 A. What's caused by a 13 deregulated lipid metabolism? 14 Q. IGF-1 syndrome? 15 A. Ah. You are talking about a 16 short stature syndrome. 17 Q. Is that right? 18 A. So there is a syndrome 19 that's characterized by IGF-1 deficiency. 20 Q. And is placental dysfunction 21 a cause of IGF-1 deficiency? 22 A. So we're talking about an 23 indication for IGF-1 as a compound. 24 That's not at all what I was using it</p>	Page 311	<p>1 Q. So I won't be hearing you 2 talk about any of those issues at trial? 3 A. I mean, depends on what I'm 4 asked about IGF-1. 5 Q. Well, I just asked you. So 6 do you have any answers? 7 MS. BROWN: Well -- 8 THE WITNESS: I will not be 9 providing any testimony about 10 placental insufficiency or IGF-1 11 deficiency. 12 BY MR. WATTS: 13 Q. Let's talk about Angelman 14 syndrome. Do you know what that is? 15 A. I do. 16 Q. Ubiquitin protein ligase 17 E3A, right? 18 A. That's correct. I'm not an 19 expert in Angelman syndrome -- 20 Q. Do you know what causes it? 21 A. I do know what causes it. 22 I'm not an expert in this area. 23 Q. What about 15q duplications? 24 A. I'm also aware of 15q</p>	Page 313

<p>1 duplication. I'm not an expert in this 2 area.</p> <p>3 Q. Okay. Are you an expert in 4 the etiology of that?</p> <p>5 A. I'm not an expert in the 6 area of 15q duplications.</p> <p>7 Q. Do you know enough about it 8 to know that the EEG signature is almost 9 identical to the beta oscillations 10 induced by benzodiazapine drugs?</p> <p>11 MS. BROWN: I object as 12 lacking foundation.</p> <p>13 THE WITNESS: I know that 14 there are EEG signatures that are 15 different than typically 16 developing controls in both 17 Angelman syndrome and 15q11 18 duplication syndrome.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Okay. Do you know that the 21 beta oscillations are similar or almost 22 identical to those induced by 23 benzodiazapine drugs?</p> <p>24 MS. BROWN: Lacks</p>	<p>Page 314</p> <p>1 syndrome, yes.</p> <p>2 Q. It's most often not 3 inherited, right?</p> <p>4 A. I'm not sure if that's 5 correct, no.</p> <p>6 Q. No? It results from not 7 having a copy of the 25 to 27 genes on 8 Chromosome Number 7, right?</p> <p>9 A. Right. So, again, inherited 10 versus sort of heritable. It's still 11 embedded within the genetics.</p> <p>12 Q. I'm not saying it's not in 13 the genetics.</p> <p>14 A. Right.</p> <p>15 Q. But it's not heritable from 16 the parents.</p> <p>17 A. It's not inherited from the 18 parents.</p> <p>19 Q. In other words, if you have 20 a kid that presents with the rare 21 mutation, Williams syndrome --</p> <p>22 A. The parent did not have it.</p> <p>23 Q. There you go. Okay.</p>
<p>Page 315</p> <p>1 foundation. I object.</p> <p>2 THE WITNESS: I was not 3 investigating that specific 4 question when I came here.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Okay. Rett syndrome, are 7 you familiar with that?</p> <p>8 A. I am.</p> <p>9 Q. It's not an inherited 10 disorder, is it?</p> <p>11 A. It's a spontaneous de novo 12 mutation that's considered to be within 13 the heritability domain. So it's 14 genetic.</p> <p>15 Q. But not inherited?</p> <p>16 A. Parents do not pass on Rett 17 syndrome to their children, but...</p> <p>18 Q. And Rett syndrome results in 19 problems with protein production critical 20 to brain development, right?</p> <p>21 A. Yes.</p> <p>22 Q. Williams syndrome, do you 23 know what that is?</p> <p>24 A. I'm familiar with Williams</p>	<p>Page 315</p> <p>1 familiar with it?</p> <p>2 A. Yeah, same.</p> <p>3 Q. Not genetic or -- strike 4 that.</p> <p>5 Not heritable, right?</p> <p>6 A. Entirely, wholly genetic.</p> <p>7 Q. I know. And I said it 8 wrong.</p> <p>9 My question is, it's not 10 heritable, right?</p> <p>11 A. It is heritable.</p> <p>12 Q. Okay.</p> <p>13 A. It is not inherited.</p> <p>14 Q. There you go.</p> <p>15 And that's an unstable 16 region that's on Chromosome 15, right?</p> <p>17 A. 15, yes.</p> <p>18 Q. Okay. Smith-Magenis 19 syndrome?</p> <p>20 A. I've seen one case with 21 Smith-Magenis syndrome.</p> <p>22 Q. And it was not inherited, 23 was it?</p> <p>24 A. It's not inherited. It is</p>

<p>1 still genetic.</p> <p>2 Q. Okay. I mean, all of these</p> <p>3 are genetic mutations and, therefore,</p> <p>4 genetic, right?</p> <p>5 A. Correct, just like autism.</p> <p>6 Q. Yeah. It's just different</p> <p>7 kinds of a fractured femur that are --</p> <p>8 they are all a broken leg?</p> <p>9 MS. BROWN: Objection to the</p> <p>10 form of the question.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. All right. Let's get --</p> <p>13 let's get back to the details.</p> <p>14 DiGeorge syndrome?</p> <p>15 A. Yes.</p> <p>16 Q. That's 22q11.2 deletion</p> <p>17 syndrome?</p> <p>18 A. Yes.</p> <p>19 Q. 90 percent of those cases</p> <p>20 are not heritable?</p> <p>21 A. Again, heritable to me means</p> <p>22 the percentage of the phenotype that's</p> <p>23 explained by genetics, in which case</p> <p>24 22q13 deletion -- 22q11 deletion system</p>	Page 318	<p>1 environmental etiology if the child is</p> <p>2 genetically predisposed, right?</p> <p>3 MS. BROWN: Objection.</p> <p>4 Improper hypothetical. Calls for</p> <p>5 speculation.</p> <p>6 THE WITNESS: I'm not sure I</p> <p>7 understand the question.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Okay. When you say that</p> <p>10 we've gone from zero to 100 rare variants</p> <p>11 to 250, and we expect to get to 500 to a</p> <p>12 thousand, those are just different</p> <p>13 examples of different kinds of gene</p> <p>14 mutations that you're able to see through</p> <p>15 the technology that we've identified,</p> <p>16 right?</p> <p>17 A. I think it's a combination</p> <p>18 of the technology being better</p> <p>19 resolution, and also a combination of the</p> <p>20 analytics methods improving.</p> <p>21 Q. Now, in -- did you write a</p> <p>22 paper in 2017 with the scientist known as</p> <p>23 Angarita?</p> <p>24 A. Yes.</p>	Page 320
<p>1 is heritable. It is genetic in origin.</p> <p>2 The parents don't also have</p> <p>3 it and, therefore, pass it on to their</p> <p>4 kids. But it is heritable, and it is</p> <p>5 genetic.</p> <p>6 Q. It's not passed along by the</p> <p>7 parents?</p> <p>8 A. Correct.</p> <p>9 Q. Okay. So far, you've</p> <p>10 identified about 250 rare genes, you</p> <p>11 said?</p> <p>12 A. So I think the field as a</p> <p>13 whole is about at, yeah, somewhere around</p> <p>14 250 genes.</p> <p>15 Q. Okay. The lion's share of</p> <p>16 those are not heritable, in that you</p> <p>17 don't see them in the parents as well,</p> <p>18 right?</p> <p>19 A. Those are mainly de novo</p> <p>20 mutations that occur when sperm meets</p> <p>21 egg, so they are carried, but they are</p> <p>22 within the gamete.</p> <p>23 Q. And each of those 250 rare</p> <p>24 genetic mutations could have an</p>	Page 319	<p>1 Q. Let me put this up real</p> <p>2 quick. Exhibit 453.</p> <p>3 (Document marked for</p> <p>4 identification as Exhibit</p> <p>5 Kolevzon 453.)</p> <p>6 BY MR. WATTS:</p> <p>7 Q. And a statement you make on</p> <p>8 Page 227.</p> <p>9 A. Oh, that's the one that I</p> <p>10 didn't recognize.</p> <p>11 TRIAL TECH: 227?</p> <p>12 MR. WATTS: 226. I'm sorry.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Under "Pathophysiology," did</p> <p>15 you write that, "10 to 15 percent of the</p> <p>16 autism spectrum disorder is caused by</p> <p>17 rare genetic variants"?</p> <p>18 A. At the time that may have</p> <p>19 been correct.</p> <p>20 Q. Okay.</p> <p>21 I'm going to be a liar. I</p> <p>22 have one more Chung video I want to ask</p> <p>23 you about. I'm sorry. I thought I was</p> <p>24 done. Exhibit 548. And we may have</p>	Page 321

<p style="text-align: right;">Page 322</p> <p>1 already played it.  2 Do you remember when she  3 said that genes only explain 20 percent  4 of the cases?</p> <p>5 MS. BROWN: Objection.  6 Misstates testimony.</p> <p>7 THE WITNESS: No.</p> <p>8 MR. WATTS: Play -- play it  9 again. It's on December 26, 2018.  10 (Video played.)</p> <p>11 DR. CHUNG: The bottom line  12 is, for any one person that I see  13 in terms of identifying a cause, I  14 can come up with the answer these  15 days about 20 percent of the time.  16 That's the good news/bad news.  17 (Video playback ended.)</p> <p>18 MR. WATTS: Stop there.</p> <p>19 THE WITNESS: So that's not  20 what she said.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Okay. Tell me what she had  23 meant -- I'm clearly ships passing in the  24 light, and I'm not trying to be -- tell</p>	<p style="text-align: right;">Page 324</p> <p>1 this depends entirely on when this  2 slide was done versus when the  3 video was done versus what the  4 technology's being used.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Okay. This is why I'm  7 asking both of them. The video that we  8 just watched saying 20 percent was in  9 December of 2018. This is in a slideshow  10 that's dated April 25th of 2023.</p> <p>11 A. So I --</p> <p>12 MS. BROWN: I object. Lacks  13 foundation.</p> <p>14 THE WITNESS: I don't  15 understand the context of this  16 slide and what exactly she's  17 referring to, what her sample is.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Okay.</p> <p>20 A. So we need to figure that  21 out first.</p> <p>22 Q. Now, here is my question.  23 And she -- she was at  24 Columbia and is now in Boston, and you</p>
<p style="text-align: right;">Page 323</p> <p>1 me what she said.</p> <p>2 A. Yeah. So what she says is  3 that when she sees 100 kids in her  4 clinic, she does genetic testing on all  5 of them. They all have autism, but only  6 20 percent of the genetic tests comes  7 back with a specific genetic cause.</p> <p>8 Q. Okay. I'll take it --</p> <p>9 A. It's the yield of the  10 genetic testing.</p> <p>11 Q. And -- and then let's go  12 back to 4 -- 568 for a second. It's the  13 PowerPoint.</p> <p>14 And if you can go to  15 Slide 10. This is dated April 25th.  16 See how she says, "Genetic  17 diagnoses in 8 to 10 percent of the  18 families"?</p> <p>19 A. Yeah.</p> <p>20 Q. Okay. Is that consistent  21 with your experience?</p> <p>22 MS. BROWN: Objection to  23 form.</p> <p>24 THE WITNESS: So, you know,</p>	<p style="text-align: right;">Page 325</p> <p>1 are at Mount Sinai.</p> <p>2 Do you have similar  3 statistics in terms of, for every 100  4 kids that we run genetic testing on, we  5 only identify a genetic diagnosis 8, 10,  6 15, 20 percent of the time?</p> <p>7 MS. BROWN: Objection to  8 form.</p> <p>9 THE WITNESS: So the  10 ascertainment will change the  11 yield for sure.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay.</p> <p>14 A. But I can't answer the  15 question as to whether her ascertainment  16 is different than mine.</p> <p>17 Q. Okay. Do you know whether  18 yours is 10 percent versus 20 percent?</p> <p>19 A. I know what it is in terms  20 of the general field, where I think we're  21 up to actually 30 percent. I think  22 Dr. Chung would say 30 percent today.  23 And I don't know what this genetic  24 diagnosis kind of --</p>

<p>1 Q. Okay.</p> <p>2 A. -- cohort is referring to.</p> <p>3 Oh, this could be SPARK. Is</p> <p>4 this SPARK?</p> <p>5 Q. I think it is.</p> <p>6 A. Oh, okay. So that's a</p> <p>7 different story altogether.</p> <p>8 Q. Now, let's talk about</p> <p>9 siblings for a second. Why is the rate</p> <p>10 of autism among siblings 50 times greater</p> <p>11 than in the general population?</p> <p>12 MS. BROWN: Objection to</p> <p>13 form. Lacks foundation.</p> <p>14 THE WITNESS: Because of the</p> <p>15 common variants.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Okay. Which is 50 percent</p> <p>18 of the genetic contribution, right?</p> <p>19 A. So among the genetic causes,</p> <p>20 it's likely that 50 percent probably can</p> <p>21 be attributed to common variants.</p> <p>22 Q. Now, I've noticed that in</p> <p>23 all of the autism cases where you've</p> <p>24 testified, you try to get a genetic test</p>	Page 326	<p>1 Q. Okay. Well, did the genetic</p> <p>2 test on the case that you testified in</p> <p>3 Houston come up negative?</p> <p>4 MS. BROWN: Objection to the</p> <p>5 form of the question.</p> <p>6 THE WITNESS: So the</p> <p>7 question, in Houston -- it wasn't</p> <p>8 Houston. It was Galveston.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Galveston.</p> <p>11 A. Galveston. Come on, guys.</p> <p>12 Q. Listen, we both moved away</p> <p>13 from Beaumont.</p> <p>14 A. Right.</p> <p>15 Q. The case that you testified</p> <p>16 in 2023 in Galveston -- I said Galveston</p> <p>17 first --</p> <p>18 A. Yeah.</p> <p>19 Q. The genetic test came up</p> <p>20 negative, didn't it?</p> <p>21 MS. BROWN: Objection to the</p> <p>22 form.</p> <p>23 THE WITNESS: The question</p> <p>24 at hand for me in that case was</p>	Page 328
<p>1 done on the little boy or the little girl</p> <p>2 that's at issue, right?</p> <p>3 MS. BROWN: Objection to the</p> <p>4 form.</p> <p>5 THE WITNESS: I usually</p> <p>6 advise that it's the standard of</p> <p>7 care. But I don't necessarily</p> <p>8 inform what happens in terms of</p> <p>9 their case or their strategy.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Okay. And even when the</p> <p>12 genetic testing doesn't identify a common</p> <p>13 variant or a rare variant with which you</p> <p>14 are familiar, you say it's not</p> <p>15 environmental, it's got to be genetic,</p> <p>16 right?</p> <p>17 MS. BROWN: Objection.</p> <p>18 Objection to form.</p> <p>19 THE WITNESS: So if you want</p> <p>20 to talk about specific cases, we</p> <p>21 have to evaluate them</p> <p>22 specifically. I can't sort of</p> <p>23 talk about them en masse.</p> <p>24 BY MR. WATTS:</p>	Page 327	<p>1 whether or not there was a</p> <p>2 likelihood that child had heavy</p> <p>3 metal poisoning from baby food and</p> <p>4 whether heavy metal poisoning had</p> <p>5 been established as the cause of</p> <p>6 autism.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. That wasn't my question.</p> <p>9 You did genetic testing on</p> <p>10 that little boy and it came up negative,</p> <p>11 didn't it?</p> <p>12 MS. BROWN: Object to that</p> <p>13 question. Lacks foundation.</p> <p>14 THE WITNESS: So, I think,</p> <p>15 two things. One, I didn't do any</p> <p>16 genetic testing. Two, I don't</p> <p>17 think the details of that</p> <p>18 particular case are appropriate to</p> <p>19 share.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Well, I'll tell you what.</p> <p>22 Assuming I've got his deposition --</p> <p>23 A. Mm-hmm.</p> <p>24 Q. -- and assuming that I've</p>	Page 329

<p>1 talked to his lawyers who gave me that 2 deposition. 3 A. Mm-hmm. 4 Q. None of Ethan's genetic 5 testing showed any genetic abnormalities. 6 Isn't that true? Didn't you 7 testify to that in your deposition, or 8 your trial testimony, in that case? 9 MS. BROWN: Well, I'm going 10 to interject, though. To the 11 extent the doctor has concerns 12 that there is a protective order 13 or confidentiality, I don't want 14 him to give any testimony. 15 Whether you had a 16 conversation with your friends on 17 the plaintiffs' side or not, if he 18 feels that giving testimony about 19 someone's genetic testing would be 20 inappropriate -- 21 MR. WATTS: Yeah, if -- 22 MS. BROWN: -- we have to 23 err on the side of caution there. 24 I'm going to instruct him not to</p>	<p>Page 330</p> <p>1 in that public record, I stand by. 2 MR. WATTS: Exhibit 513. 3 Page 25. 4 (Document marked for 5 identification as Exhibit 6 Kolevzon 513.) 7 BY MR. WATTS: 8 Q. In the public transcript, in 9 the public testimony, in the public 10 record. 11 Page 25. There we go. 12 "And so what we know about 13 Ethan's genetic testing is that none of 14 the tests that he had showed any genetic 15 abnormalities, right, sir?" 16 The answer was, "Correct," 17 right? 18 A. To the extent of our 19 knowledge and to the extent of the 20 testing that was done, and where we are 21 sitting today, no identified genetic 22 abnormalities were found. 23 Q. That was the same as in the 24 Sullens case in 2018. There was no</p>
<p>1 answer that. 2 BY MR. WATTS: 3 Q. Let's err -- let's err on 4 the side that when you testify in a 5 trial, it's a public courtroom and it is 6 a public record, okay? So this isn't 7 something where that nonsense is going to 8 play, okay? 9 You were in trial in 10 Galveston earlier this year and testified 11 that none of Ethan's genetic testing 12 showed any genetic abnormalities, right? 13 MS. BROWN: And I'll just 14 give you the same caution. If you 15 are concerned that answering these 16 questions is revealing something 17 that was not testified to in a 18 public arena, then I don't want 19 you to answer it. 20 THE WITNESS: This is a 21 public record? 22 BY MR. WATTS: 23 Q. It is. 24 A. Then, obviously, what I said</p>	<p>Page 331</p> <p>1 genetic test done that was able to detect 2 a genetic cause for this child's autism, 3 right? 4 A. That is -- 5 MS. BROWN: I object. 6 That's inconsistent with the 7 testimony on the rest of this 8 page. 9 THE WITNESS: I don't have 10 any memory of that case. 11 MR. WATTS: Exhibit 480, 12 Page 82. 13 (Document marked for 14 identification as Exhibit 15 Kolevzon 480.) 16 BY MR. WATTS: 17 Q. Lines 19 through 21. 18 MS. BROWN: And can we take 19 a break when you get to a good 20 spot? 21 MR. WATTS: Yeah, when I get 22 done with this spot, sure. 23 BY MR. WATTS: 24 Q. You see in the Sullens</p>

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1 versus Walmart case, there was no genetic  
 2 test done that was able to detect a  
 3 genetic cause for this child's autism?  
 4 A. So in this case -- this is  
 5 also public record?  
 6 MS. BROWN: I don't know.  
 7 Let's look.  
 8 This is a deposition. I  
 9 don't know. If you have any  
 10 concerns, don't testify about it.  
 11 THE WITNESS: So --  
 12 MS. BROWN: Do -- can you  
 13 represent there is no protective  
 14 order? I don't know how you got  
 15 this deposition.  
 16 BY MR. WATTS:  
 17 Q. Do you have an answer for my  
 18 question?  
 19 MS. BROWN: Well, no, but  
 20 he's raised a concern, and it's a  
 21 fair --  
 22 MR. WATTS: Alli, you don't  
 23 represent Walmart. Come on.  
 24 You're just obstructing --

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1 MS. BROWN: No, no. But  
 2 if -- if he's subject to a  
 3 protective order because he gave a  
 4 deposition in another case and  
 5 he's raising a concern about it --  
 6 MR. WATTS: I've got the  
 7 deposition --  
 8 MS. BROWN: -- I'm going to  
 9 advise him not to testify about  
 10 it.  
 11 BY MR. WATTS:  
 12 Q. I've got the deposition in  
 13 the Sullens case. There was a genetic  
 14 testing done. It showed no genetic  
 15 abnormalities, again.  
 16 MS. BROWN: I'm going to  
 17 give you the same caution --  
 18 THE WITNESS: So, yeah, I  
 19 think -- if we can dig into these  
 20 cases, the question at hand here  
 21 was whether the so-called insult  
 22 caused this child to have autism.  
 23 In this case it was crystal clear  
 24 that it did not.

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1 MR. WATTS: Objection.  
 2 Nonresponsive.  
 3 MS. BROWN: I object.  
 4 BY MR. WATTS:  
 5 Q. Was there genetic test done  
 6 of the Sullens kid and it didn't show a  
 7 genetic cause for this child's autism?  
 8 MS. BROWN: Objection to  
 9 form.  
 10 THE WITNESS: I don't recall  
 11 the details of this case.  
 12 BY MR. WATTS:  
 13 Q. What about the Huddleston  
 14 case, Exhibit 526.  
 15 (Document marked for  
 16 identification as Exhibit  
 17 Kolevzon 526.)  
 18 BY MR. WATTS:  
 19 Q. Was there testing done in  
 20 that case?  
 21 A. I don't recall the details  
 22 of that case.  
 23 Q. Doctor, with respect to  
 24 sibling controls, have you read the

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1 Solander paper in 2016 that the bias  
 2 tends to attenuate the estimated effect  
 3 toward the null in some common scenarios,  
 4 thus producing a conservative estimate of  
 5 the true exposure effect?  
 6 MS. BROWN: Objection to the  
 7 form of the question.  
 8 THE WITNESS: I would have  
 9 to see the paper.  
 10 BY MR. WATTS:  
 11 Q. Sure.  
 12 A. I have to see the paper.  
 13 Q. Okay. Have you heard that  
 14 generally, in looking at sibling control  
 15 studies, that they bias towards the null?  
 16 MS. BROWN: Objection to the  
 17 form.  
 18 THE WITNESS: I have heard  
 19 people make that claim, yes.  
 20 BY MR. WATTS:  
 21 Q. Do you agree with it?  
 22 MS. BROWN: Objection to the  
 23 form. Calls for speculation.  
 24 THE WITNESS: I think --

<p>1 yeah, I think it depends on the 2 study, it depends on the design, 3 it depends on the rigor. 4 BY MR. WATTS: 5 Q. In what way is a study 6 design with the sibling controls that 7 will bias towards the null? 8 MS. BROWN: Objection. 9 Overbroad. 10 THE WITNESS: Can you be 11 more specific? 12 BY MR. WATTS: 13 Q. No. You said it depends on 14 how the study is designed. In which way 15 does study design cause a sibling control 16 study to bias towards the null? 17 MS. BROWN: Objection. 18 Assumes facts. Misstates 19 testimony. 20 THE WITNESS: So a sibling 21 control study, if you take a 22 mother who took acetaminophen 23 during pregnancy and had a child 24 with autism and you compare the</p>	<p>Page 338</p> <p>1 So when you talk about an 2 environmental factor, we know it's not 3 heritable, right? 4 MS. BROWN: Objection to the 5 form. 6 THE WITNESS: So it depends. 7 BY MR. WATTS: 8 Q. Now, environmental factors 9 can trigger genetic predisposition, 10 right? 11 MS. BROWN: Objection. 12 Assumes facts. Lacks foundation. 13 THE WITNESS: You'll have to 14 give me a specific instance. 15 BY MR. WATTS: 16 Q. Well, epigenetics is the 17 study of how various factors can 18 influence the expression of genes without 19 changing the structure of the DNA, right? 20 A. That's a true statement. 21 Q. And the expression of autism 22 genes may be influenced by environmental 23 factors, right? 24 MS. BROWN: Objection to the</p>
<p>1 rates of those autism offspring to 2 the rates of a parent who didn't 3 take acetaminophen during 4 pregnancy, that would be an 5 effective sibling control that 6 should, ideally, control for some 7 genetic confounding at least. 8 BY MR. WATTS: 9 Q. Okay. I want -- one last 10 issue and then we'll break. 11 An environmental factor, as 12 it relates to autism, really just means 13 anything that's not genetic, right? 14 MS. BROWN: Objection to 15 form. 16 THE WITNESS: Yeah, so, 17 broadly speaking, people have 18 included lots of different factors 19 in the environment, some of which 20 could actually be genetic in 21 origin. But by definition, they 22 are not heritable. 23 BY MR. WATTS: 24 Q. Okay. Good.</p>	<p>Page 339</p> <p>1 form. 2 THE WITNESS: So 3 theoretically and hypothetically, 4 that is possible. 5 BY MR. WATTS: 6 Q. You cited to the Johnson 7 paper, which I marked as Exhibit 415, 8 that says precisely that. Do you agree 9 with it? 10 A. Let's go to the reference. 11 Q. Okay. 12 MR. WATTS: Exhibit 415. 13 (Document marked for 14 identification as Exhibit 15 Kolevzon 415.) 16 BY MR. WATTS: 17 Q. 1188. Second column under 18 "Environmental Issues." 19 "However, the expression of 20 the autism genes may be influenced by 21 environmental factors. Although 22 currently under investigation, these 23 factors may represent a 'second hit' 24 phenomenon that primarily occurs during</p>

<p>1 fetal brain development. That is, 2 environmental factors may modulate 3 already existing genetic factors 4 responsible for the manifestation of 5 autism spectrum disorders in individual 6 children."</p> <p>7 Did I read that right?</p> <p>8 A. This is an important 9 hypothesis-generating idea and something 10 that's being actively pursued.</p> <p>11 Q. Well, let's look at another 12 study you cited. 416, which is the Moy 13 and Nadler study?</p> <p>14 A. Sorry, the what?</p> <p>15 (Document marked for 16 identification as Exhibit 17 Kolevzon 416.)</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Page 4, please.</p> <p>20 A. Yep.</p> <p>21 MR. WATTS: Page 4.</p> <p>22 TRIAL TECH: That is Page 4.</p> <p>23 MR. WATTS: First page. I'm 24 sorry. In the abstract -- pull up</p>	Page 342	<p>1 same thing, which is that there 2 are possible environmental factors 3 that are worthy of study but, at 4 the moment, are hypothesis 5 generating.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Let's go to 511, which is 8 the LaSalle paper.</p> <p>9 "Epigenomic signatures 10 reveal mechanistic clues and predictive 11 markers for autism spectrum disorder." 12 In 2023?</p> <p>13 MS. BROWN: 511?</p> <p>14 MR. WATTS: Yep.</p> <p>15 MS. BROWN: This box doesn't 16 have it. Hang on.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. It says, "These findings 19 have demonstrated that ASD etiology is 20 decidedly complex with hundreds of genes 21 and interactions with environmental 22 factors."</p> <p>23 Is that what LaSalle says?</p> <p>24 MS. BROWN: I object. He</p>	Page 344
<p>1 the abstract.</p> <p>2 Second sentence. Third 3 sentence, rather -- well, second 4 and third.</p> <p>5 By MR. WATTS:</p> <p>6 Q. "Etiology is thought to 7 involve complex multigenic interactions 8 and possible environmental contributions. 9 In this review, we focus on the genetic 10 pathways with multiple members 11 represented in autism candidate gene 12 lists. Many of these pathways can also 13 be impinged upon by environmental risk 14 factors associated with the disorder."</p> <p>15 Did I read that right?</p> <p>16 A. So like in all these 17 studies --</p> <p>18 Q. Did I read that right?</p> <p>19 MS. BROWN: Well, let him 20 answer, please.</p> <p>21 THE WITNESS: You read the 22 words on the page, but I need to 23 contextualize it by saying that 24 all these studies are saying the</p>	Page 343	<p>1 needs a minute to look at LaSalle. 2 Lacks foundation.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Can you see it right at the 5 bottom of Column 1 on the first page?</p> <p>6 A. So the first part of the 7 sentence is categorically true, that ASD 8 etiology is decidedly complex. It is 9 true that it involves hundreds of genes.</p> <p>10 Q. And interactions?</p> <p>11 A. Interacts with environmental 12 factors, at this point, remains 13 speculative.</p> <p>14 Q. Okay. But the words on the 15 screen say, "involving hundreds of genes 16 and interactions with environmental 17 factors," does it not?</p> <p>18 A. Those are the words.</p> <p>19 Q. Okay.</p> <p>20 A. But you are taking them out 21 of context.</p> <p>22 Q. Okay. Let's go to Page 5 23 and take it out of context some more.</p> <p>24 MS. BROWN: I hope you're</p>	Page 345

<p>1 not being argumentive.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Second column at the top.</p> <p>4 "Together these results suggested a</p> <p>5 multi-hit intersecting pathway between</p> <p>6 genetic susceptibility and an</p> <p>7 environmental exposure observed through</p> <p>8 shared epigenomic signature."</p> <p>9 Is that right?</p> <p>10 MS. BROWN: I object. This</p> <p>11 lacks foundation to random</p> <p>12 sentences being read.</p> <p>13 THE WITNESS: I need to</p> <p>14 figure out what they are</p> <p>15 referencing. This is a review</p> <p>16 paper.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Well, Doctor, in your</p> <p>19 papers, you published a study in 2012</p> <p>20 with Sandin. "There's evidence that</p> <p>21 nonheritable perinatal events and/or</p> <p>22 environmental exposures are likely to</p> <p>23 have a significant etiological role,"</p> <p>24 right?</p>	<p>Page 346</p>	<p>1 A. He is very passionate about</p> <p>2 exploring these risk factors. And if he</p> <p>3 were sitting here today, he would</p> <p>4 certainly not say that acetaminophen</p> <p>5 causes autism.</p> <p>6 MR. WATTS: Objection --</p> <p>7 THE WITNESS: That's</p> <p>8 speculative on my part.</p> <p>9 MR. WATTS: Yeah.</p> <p>10 Objection. Speculation.</p> <p>11 MS. BROWN: That question</p> <p>12 called for speculation, so the</p> <p>13 answer was appropriate.</p> <p>14 MR. WATTS: Okay, Judge.</p> <p>15 Let's keep going.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. You and Reichenberg have</p> <p>18 participated in the same grants seeking</p> <p>19 money from the federal government, the</p> <p>20 NIH, and others, to study environmental</p> <p>21 factors, right?</p> <p>22 A. Correct.</p> <p>23 Q. And let me just put up one</p> <p>24 of those abstracts, Exhibit 452.</p>	<p>Page 348</p>
<p>1 A. There is no question that</p> <p>2 there are other nongenetic factors that</p> <p>3 play a role in autism. As of yet, we</p> <p>4 have not reliably identified them. And</p> <p>5 none of the risk factors have reached the</p> <p>6 level of causation.</p> <p>7 Q. Dr. Reichenberg there at</p> <p>8 Mount Sinai is very bullish on the idea</p> <p>9 that environmental factors have great</p> <p>10 importance with respect to autism, right?</p> <p>11 MS. BROWN: Objection.</p> <p>12 Lacks foundation.</p> <p>13 THE WITNESS:</p> <p>14 Dr. Reichenberg is the lead of our</p> <p>15 environmental and epidemiological</p> <p>16 group at Mount Sinai in the autism</p> <p>17 center, so, yes, he is --</p> <p>18 BY MR. WATTS:</p> <p>19 Q. And then --</p> <p>20 MS. BROWN: Let him finish,</p> <p>21 please.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. I'm sorry, I thought you</p> <p>24 were done. Go ahead.</p>	<p>Page 347</p>	<p>1 MS. BROWN: Can we take a</p> <p>2 break?</p> <p>3 MR. WATTS: Almost done.</p> <p>4 (Document marked for</p> <p>5 identification as Exhibit</p> <p>6 Kolevzon 452.)</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Exhibit 452 is one of the</p> <p>9 grant abstracts, "Autism and Prenatal</p> <p>10 Endocrine Disruptors," that's referenced</p> <p>11 in your CV as one of the grants that</p> <p>12 you've worked on?</p> <p>13 A. Yes.</p> <p>14 Q. And part of what's said here</p> <p>15 is, "Both genetic and environmental</p> <p>16 factors contribute to autism spectrum</p> <p>17 disorder, but environmental factors have</p> <p>18 been understudied. Because environmental</p> <p>19 factors are potentially modifiable, they</p> <p>20 should be a research priority."</p> <p>21 Is that what y'all said?</p> <p>22 A. That's what we said.</p> <p>23 MR. WATTS: Let's take that</p> <p>24 break.</p>	<p>Page 349</p>

<p>1 THE VIDEOGRAPHER: The time  2 right now is 12:43 p.m. We are  3 off the record.  4 - - -  5 (Whereupon a luncheon recess  6 was taken.)  7 - - -  8 THE VIDEOGRAPHER: The time  9 right now is 1:32 p.m. We're back  10 on the record.  11 - - -  12 CONTINUED EXAMINATION  13 - - -  14 BY MR. WATTS:  15 Q. Doctor, your research has  16 included an examination of risk factors  17 for autism spectrum disorder, correct?  18 A. Yes. I've reviewed some of  19 the literature and I have some ongoing  20 projects that are doing that.  21 Q. And you have done studies on  22 environmental risks for autism, right?  23 A. I'm involved in studies that  24 are looking at environmental risks for </p>	<p>Page 352  1 (Document marked for  2 identification as Exhibit  3 Kolevzon 486.)  4 BY MR. WATTS:  5 Q. It's August 4, 2020.  6 Page 155, Lines 15 through 18.  7 "Question: Is it your  8 testimony under oath that there are no  9 studies that suggest or find that there  10 are causes of autism other than genetic?"  11 Is your answer: "No, that  12 is not my testimony"?  13 MS. BROWN: Objection to  14 form.  15 THE WITNESS: I think I'm  16 probably saying the same thing now  17 as I was saying then. That's  18 what's written on the page, yes.  19 BY MR. WATTS:  20 Q. Okay. You wrote a paper  21 with a scientist named Puleo in 2012?  22 A. You'll have to refresh my  23 memory.  24 Q. Okay. </p>
<p>1 autism, yes.  2 Q. And having done studies on  3 the environmental risks for autism, it is  4 not your testimony under oath that there  5 are no studies that suggest or find that  6 there are causes of autism other than  7 genetic, correct?  8 A. Can you repeat the question?  9 Q. Having conducted or  10 participated in the studies on  11 environmental risk for autism, it is not  12 your testimony under oath that there are  13 no studies that suggest or find that  14 there are causes of autism other than  15 genetic?  16 A. So there's -- there's sort  17 of a double negative built into that.  18 My testimony is that the  19 only established causes of autism are  20 genetic in origin. And there are ongoing  21 studies of environmental risk factors.  22 Q. Let me show you your  23 testimony in the Purdie versus Mercy  24 Medical case, Exhibit 486. </p>	<p>Page 351  1 MR. WATTS: Exhibit 429,  2 please.  3 (Document marked for  4 identification as Exhibit  5 Kolevzon 429.)  6 BY MR. WATTS:  7 Q. "Advancing paternal age and  8 simplex autism."  9 Were you one of the authors  10 together with Puleo in this article, 2011  11 or '12?  12 A. Yes, I was.  13 Q. Okay. If we look at  14 Page 368, part of what you write is,  15 "Causal gene mutations in male sperm  16 cells, environmental exposure with  17 mutagenic effects, increasing use of  18 infertility or assisted reproductive  19 technologies, or the combination of these  20 mechanisms may all be potential  21 descriptors. Such mechanisms may  22 particularly play a role in autism  23 spectrum disorder that appears less  24 likely to be inherited, occurring in </p>

<p style="text-align: right;">Page 354</p> <p><sup>1</sup> families with no prior history of the <sup>2</sup> disorder, with spontaneous mutation <sup>3</sup> hypotheses thus far gaining the most <sup>4</sup> research attention and support."</p> <p><sup>5</sup> Did I read that correctly?</p> <p><sup>6</sup> A. So the words on the page <sup>7</sup> were read correctly.</p> <p><sup>8</sup> The intent was to better <sup>9</sup> understand paternal age effects. And the <sup>10</sup> idea is that as men age, their ability to <sup>11</sup> synthesize sperm is more susceptible to <sup>12</sup> copy errors, and so they pass on <sup>13</sup> mutations to children. So it's, <sup>14</sup> therefore, still heritable.</p> <p><sup>15</sup> Q. Did I read the words on the <sup>16</sup> page correctly, sir?</p> <p><sup>17</sup> MS. BROWN: Asked and <sup>18</sup> answered.</p> <p><sup>19</sup> THE WITNESS: So I did say <sup>20</sup> that you read the words on the <sup>21</sup> page correctly, but, I think, <sup>22</sup> taking those words out of context. <sup>23</sup> It's important to understand what <sup>24</sup> the intent was.</p>	<p style="text-align: right;">Page 356</p> <p><sup>1</sup> A. Depends on whether it's <sup>2</sup> permanent, but it can change...</p> <p><sup>3</sup> Q. So environmental exposure <sup>4</sup> can change genetic material, right?</p> <p><sup>5</sup> A. I think we've established <sup>6</sup> that environmental exposure can change <sup>7</sup> genetic material. I think the issue is <sup>8</sup> that in autism, that has not been <sup>9</sup> established.</p> <p><sup>10</sup> Q. Well, except in your book <sup>11</sup> chapter.</p> <p><sup>12</sup> A. Which chapter is that?</p> <p><sup>13</sup> Q. We'll keep going.</p> <p><sup>14</sup> Doctor, what is ID?</p> <p><sup>15</sup> A. ID is an acronym that stands <sup>16</sup> for intellectual disability.</p> <p><sup>17</sup> Q. Genetic and environmental <sup>18</sup> factors are implicated in intellectual <sup>19</sup> disability, correct?</p> <p><sup>20</sup> A. Genetic and environmental <sup>21</sup> factors are implicated.</p> <p><sup>22</sup> Q. Okay. Have adverse outcomes <sup>23</sup> in neurodevelopmental function been <sup>24</sup> associated with conventional medications</p>
<p style="text-align: right;">Page 355</p> <p><sup>1</sup> BY MR. WATTS:</p> <p><sup>2</sup> Q. Well, the context is the <sup>3</sup> first sentence that I didn't read. "The <sup>4</sup> etiological implications of these <sup>5</sup> paternal age findings remain unclear," <sup>6</sup> right?</p> <p><sup>7</sup> A. So, in --</p> <p><sup>8</sup> Q. I'll tell you what. Let me <sup>9</sup> strike the question --</p> <p><sup>10</sup> A. We just have to go back to <sup>11</sup> the date of the article.</p> <p><sup>12</sup> Q. Let me -- let me re-ask a <sup>13</sup> different question that's on my mind.</p> <p><sup>14</sup> Do you see on Line 2 where <sup>15</sup> it says, "Environmental exposure with <sup>16</sup> mutagenic effects"?</p> <p><sup>17</sup> A. I see those words, yes.</p> <p><sup>18</sup> Q. A mutagen is a chemical <sup>19</sup> agent that increases the rate of a <sup>20</sup> genetic mutation by interfering with the <sup>21</sup> function of nucleic acids, right?</p> <p><sup>22</sup> A. Yes.</p> <p><sup>23</sup> Q. It permanently changes <sup>24</sup> genetic material?</p>	<p style="text-align: right;">Page 357</p> <p><sup>1</sup> used during pregnancy?</p> <p><sup>2</sup> MS. BROWN: Objection to the <sup>3</sup> form.</p> <p><sup>4</sup> THE WITNESS: It's a very <sup>5</sup> broad statement. It would be <sup>6</sup> helpful for you to be more <sup>7</sup> specific.</p> <p><sup>8</sup> BY MR. WATTS:</p> <p><sup>9</sup> Q. Sure. Exhibit 463. <sup>10</sup> (Document marked for <sup>11</sup> identification as Exhibit <sup>12</sup> Kolevzon 463.)</p> <p><sup>13</sup> BY MR. WATTS:</p> <p><sup>14</sup> Q. You wrote a paper in 2017 <sup>15</sup> with Viktorin. Do you remember that <sup>16</sup> paper?</p> <p><sup>17</sup> A. If I take a look at it, I'm <sup>18</sup> sure I'll remember it.</p> <p><sup>19</sup> Q. Okay. Exhibit 463. <sup>20</sup> Are you a co-author with <sup>21</sup> Alexander Viktorin?</p> <p><sup>22</sup> A. Yes.</p> <p><sup>23</sup> Q. And where does he work?</p> <p><sup>24</sup> A. He worked at Mount Sinai at</p>

<p>1 the time, I believe.</p> <p>2 Q. Okay. Rudolf Uher, where</p> <p>3 did he work?</p> <p>4 A. I don't know, but we could</p> <p>5 check the affiliations.</p> <p>6 Q. Reichenberg worked at Mount</p> <p>7 Sinai, right?</p> <p>8 A. Yes, for sure.</p> <p>9 Q. Sven Sandin worked at Mount</p> <p>10 Sinai, right?</p> <p>11 A. Yes, for sure.</p> <p>12 Q. So there's at least four of</p> <p>13 you that worked at Mount Sinai that wrote</p> <p>14 this article entitled, "Association of</p> <p>15 Antidepressant Medication Use During</p> <p>16 Pregnancy With Intellectual Disability in</p> <p>17 Offspring," right?</p> <p>18 A. Yes.</p> <p>19 Q. If we go to the second page,</p> <p>20 the top left. Part of what you all wrote</p> <p>21 is, "Genetic and environmental factors</p> <p>22 are implicated in intellectual</p> <p>23 disability," right?</p> <p>24 A. Yep.</p>	Page 358	<p>1 page. Keep going. 63. Go. Right</p> <p>2 there.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Do you see that, sir?</p> <p>5 A. Yes.</p> <p>6 Q. And if we could go to the</p> <p>7 next page, 856. Says, "Nongenetic</p> <p>8 factors, including advancing parental</p> <p>9 age, have also started emerging in autism</p> <p>10 spectrum disorder, although the precise</p> <p>11 nature of these associations has yet to</p> <p>12 be determined.</p> <p>13 "In addition, environmental</p> <p>14 factors (e.g., maternal alcohol abuse</p> <p>15 during gestation, infections, birth</p> <p>16 complications, and malnutrition) are</p> <p>17 major contributors of ID etiology."</p> <p>18 Is that what you wrote?</p> <p>19 A. That's what's written. And,</p> <p>20 of course, I think we've covered this.</p> <p>21 There's no debate about whether or not</p> <p>22 there are environmental factors. The</p> <p>23 debate is what those factors are.</p> <p>24 Q. With respect to those</p>	Page 360
<p>1 Q. And they include "factors</p> <p>2 that affect fetal development, such as</p> <p>3 uncontrolled diabetes and congenital</p> <p>4 exposures to infectious agents or toxic</p> <p>5 agents," right?</p> <p>6 A. It does say these are</p> <p>7 implicated. That's true.</p> <p>8 Q. Doctor, did you write a</p> <p>9 paper with a gentleman by the name of</p> <p>10 Costales in 2018?</p> <p>11 A. Yes.</p> <p>12 MR. WATTS: Exhibit 465.</p> <p>13 (Document marked for</p> <p>14 identification as Exhibit</p> <p>15 Kolevzon 465.)</p> <p>16 BY MR. WATTS:</p> <p>17 Q. This is in Charney and</p> <p>18 Nestler's book, Neurobiology of Mental</p> <p>19 Illness, Fifth Edition. And it's</p> <p>20 Chapter 63. "Neurobiology of Autism</p> <p>21 Spectrum Disorder and Intellectual</p> <p>22 Disability, Animal and Human Studies,"</p> <p>23 right?</p> <p>24 MR. WATTS: Go to the next</p>	Page 359	<p>1 factors, there are a group of factors</p> <p>2 that likely act on the genetic</p> <p>3 vulnerability to increase the risk of</p> <p>4 autism spectrum disorder; is that right?</p> <p>5 MS. BROWN: Objection to the</p> <p>6 form of the question. Lacks</p> <p>7 foundation.</p> <p>8 THE WITNESS: It's correct</p> <p>9 that that is a good idea and a</p> <p>10 hypothetical mechanism that's</p> <p>11 worthy of exploration. But it has</p> <p>12 not been established or commonly</p> <p>13 accepted in the scientific</p> <p>14 community.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Well, let's go to your blog.</p> <p>17 MR. WATTS: Exhibit 474.</p> <p>18 (Document marked for</p> <p>19 identification as Exhibit</p> <p>20 Kolevzon 474.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. In this blog, you shared</p> <p>23 research on autism diagnosis and</p> <p>24 explained current treatments for the</p>	Page 361

<p>1 disease, right?</p> <p>2 A. Give me a moment, because I</p> <p>3 don't -- I don't have any memory</p> <p>4 whatsoever of this blog. I don't recall</p> <p>5 blogging.</p> <p>6 Q. Well, on Page 3 of this</p> <p>7 exhibit, it says at the top, "There's</p> <p>8 also a group of factors that likely act</p> <p>9 on the genetic vulnerability to increase</p> <p>10 the risk of autism spectrum disorder.</p> <p>11 These risk factors include very low birth</p> <p>12 weight, preterm birth, older paternal</p> <p>13 age, and exposure to several toxins</p> <p>14 during pregnancy"; is that right?</p> <p>15 A. So going back to the page</p> <p>16 before, it says that autism is primarily</p> <p>17 a genetic disorder. And that, yes, there</p> <p>18 are likely some environmental risk</p> <p>19 factors that act to increase the risk.</p> <p>20 Q. Okay. And so the bottom</p> <p>21 line is, if you're genetically</p> <p>22 predisposed, the environmental factor may</p> <p>23 occur and push you over the edge, which</p> <p>24 then leads to the development of autism</p>	Page 362	<p>1 MS. BROWN: Objection.</p> <p>2 Lacks foundation.</p> <p>3 THE WITNESS: So you'd need</p> <p>4 to show me exactly what the</p> <p>5 testimony is --</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Exhibit 486, Page 140,</p> <p>8 Line 21, through 141, Line 5.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 486.)</p> <p>12 BY MR. WATTS:</p> <p>13 Q. "Question: I understand</p> <p>14 your opinion -- all right. I understand</p> <p>15 the first part of your opinion as a</p> <p>16 layperson, which is that if you're</p> <p>17 genetically predisposed, the</p> <p>18 environmental factor may occur and push</p> <p>19 you over the edge which then leads to the</p> <p>20 development of that condition, correct?"</p> <p>21 And what was your answer?</p> <p>22 A. So --</p> <p>23 MS. BROWN: I object. Let's</p> <p>24 get him the hardcopy.</p>	Page 364
<p>1 spectrum disorder, right?</p> <p>2 MS. BROWN: I object to the</p> <p>3 form. It lacks foundation.</p> <p>4 THE WITNESS: So the</p> <p>5 hypothesis is exactly that.</p> <p>6 Correct.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Well, it's more than a</p> <p>9 hypothesis. It was your testimony in the</p> <p>10 Purdie versus Mercy Medical case in 2020,</p> <p>11 right?</p> <p>12 MS. BROWN: Objection to</p> <p>13 form.</p> <p>14 THE WITNESS: This is a</p> <p>15 conceptual framework for how</p> <p>16 environmental factors act, and as</p> <p>17 I said, there are no established</p> <p>18 environmental factors that reach</p> <p>19 the level of causation.</p> <p>20 MR. WATTS: Objection.</p> <p>21 Nonresponsive.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Was that your testimony in</p> <p>24 the Purdie versus Mercy Medical case?</p>	Page 363	<p>1 Is this something we've</p> <p>2 already looked at?</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Sir, what was your answer?</p> <p>5 A. I need to see the line of</p> <p>6 questioning in order to better understand</p> <p>7 the context.</p> <p>8 MS. BROWN: I'll try to find</p> <p>9 it for you.</p> <p>10 THE WITNESS: But my answer,</p> <p>11 as it's written on the page, is</p> <p>12 "Yes."</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. Do you remember the</p> <p>15 Mercy Medical case, the Purdie case?</p> <p>16 A. I remember participating. I</p> <p>17 don't remember the details.</p> <p>18 Q. Okay. In the book chapter</p> <p>19 that we started this deposition with, in</p> <p>20 March of 2022, the Textbook of Autism</p> <p>21 Spectrum Disorder, second division --</p> <p>22 Second Edition, your book chapter says,</p> <p>23 "There is strong evidence that</p> <p>24 nonheritable prenatal, perinatal and</p>	Page 365

<p>1      parental events play a role in the  2      etiology of autism spectrum disorder,"  3      right?  4      MS. BROWN: Objection to the  5      form.  6      THE WITNESS: So this is the  7      book chapter that was written by  8      Ori Kapra. Is that -- that's the  9      one we are talking about?  10     BY MR. WATTS:  11     Q. It's the one that's got your  12    name on it that wasn't on your CV.  13     A. Yeah.  14     MS. BROWN: Well, can we  15    just have the year?  16     BY MR. WATTS:  17     Q. 2022 March.  18     A. So as I said, autism is  19    80 percent, maybe more, heritable. But  20    when you look at twin studies, there are  21    not 100 percent concordant, which means  22    that there's some environmental effect  23    that plays a role in the etiology.  24    However, there have been no clear </p>	<p>Page 366</p>	<p>1      Q. The etiology of autism  2      spectrum disorder is multifactorial,  3      includes a combination of genetic and  4      environmental factors as well as their  5      interaction, right?  6      A. Theoretically, in some  7      cases, that may be right. In most cases,  8      I would identify to date, a single  9      genetic factor is sufficient to cause  10     autism.  11     Q. In the nontheoretical March  12    of 2021 paper you wrote with Katz, that's  13    been marked as Exhibit 491, you wrote,  14    "The etiology of ASD is thought to be  15    multifactorial and includes a combination  16    of genetic and environmental factors, as  17    well as their interaction," did you not?  18     A. That's what's written on the  19    page. But in the broader context of  20    autism spectrum disorder, as I said,  21    there are many causes of autism where a  22    single genetic mutation is sufficient to  23    cause a phenotype.  24     Q. Doctor, I want to talk to </p>	<p>Page 368</p>
<p>1      established factors that rise to the  2      level of causation.  3      And as it relates to this  4      case, acetaminophen has been studied as  5      it relates to autism, and there's no  6      evidence that it's even associated.  7      MR. WATTS: Objection.  8      Nonresponsive.  9      MS. BROWN: Object.  10     BY MR. WATTS:  11     Q. In your book chapter, March  12    of 2022, one of the key points says,  13    "There is strong evidence that  14    nonheritable prenatal, perinatal, and  15    parental events play a role in the  16    etiology of autism spectrum disorder"; is  17    that right?  18     MS. BROWN: Asked and  19    answered. I object.  20     THE WITNESS: I would say  21    strong evidence exists for some  22    factors. But acetaminophen is not  23    among them.  24     BY MR. WATTS: </p>	<p>Page 367</p>	<p>1      you about comorbidities. Explain for the  2      jury what a comorbidity is.  3      A. A comorbidity is a condition  4      that occurs along with another condition.  5      So in the case of autism, a common  6      comorbidity would be something like  7      anxiety or attention problems or  8      hyperactivity.  9      Q. Okay. Did you write a paper  10     with Vahe Khachadourian of Mount Sinai on  11    comorbidities and autism spectrum  12    disorder and their etiologies?  13     A. It's vaguely familiar.  14     Q. It says published online in  15    February 2023, this year. Does that  16    help? Published in Translational  17    Psychiatry?  18     A. Let's take it out so I can  19    see.  20     MR. WATTS: Okay. Let's go  21    to Exhibit 514.  22     (Document marked for  23    identification as Exhibit  24    Kolevzon 514.) </p>	<p>Page 369</p>

<p>1 BY MR. WATTS:</p> <p>2 Q. First of all, did you write</p> <p>3 that paper with Mr. -- or</p> <p>4 Dr. Khachadourian?</p> <p>5 A. Dr. Khachadourian wrote the</p> <p>6 paper. I was a co-author.</p> <p>7 Q. And in terms of the other</p> <p>8 authors of the paper, Behrang Mahjani at</p> <p>9 Mount Sinai, right?</p> <p>10 A. Yeah. Behrang, Sven, Joe,</p> <p>11 Avi and Magdalena are all at Mount Sinai.</p> <p>12 Q. Everybody on this paper is a</p> <p>13 Mount Sinai scientist, right?</p> <p>14 A. Yes.</p> <p>15 Q. And in the paper, if we look</p> <p>16 at Page 10 of 17, the seven Mount Sinai</p> <p>17 scientists co-authoring this paper end</p> <p>18 the discussion by saying, "These results</p> <p>19 suggest that the higher rates of certain</p> <p>20 comorbidities in autism spectrum disorder</p> <p>21 may be partly attributable to the higher</p> <p>22 rates of the underlying risk factors</p> <p>23 (environmental exposures, or the</p> <p>24 underlying genetic variation) among the</p>	<p>Page 370</p>	<p>1 Q. It has a direct line from</p> <p>2 genetic factors to autism spectrum</p> <p>3 disorder, right?</p> <p>4 A. Yes.</p> <p>5 Q. And it has direct lines from</p> <p>6 genetic factors and environmental</p> <p>7 exposures with respect to comorbidities,</p> <p>8 right?</p> <p>9 A. This is a very simplistic</p> <p>10 diagram illustrating the interaction</p> <p>11 between the environment and genetics,</p> <p>12 yes.</p> <p>13 Q. And it's a very simplistic</p> <p>14 diagram included in a paper that seven</p> <p>15 scientists at Mount Sinai, including</p> <p>16 yourself, wrote this year, right?</p> <p>17 A. There's no debate that this</p> <p>18 is a reasonable framework.</p> <p>19 Q. Okay. If we go to Page 13</p> <p>20 of 17.</p> <p>21 Part of which you all</p> <p>22 concluded was, "We demonstrated that the</p> <p>23 common comorbidities in individuals with</p> <p>24 autism spectrum disorder are often</p>	<p>Page 372</p>
<p>1 affected individuals, rather than to</p> <p>2 downstream effects of autism spectrum</p> <p>3 disorder itself."</p>	<p>Page 371</p>	<p>1 associated with pre- and postnatal</p> <p>2 exposure also linked to autism spectrum</p> <p>3 disorder."</p>	<p>Page 373</p>
<p>4 Is that what you all wrote?</p>		<p>4 Did I read that right?</p>	
<p>5 A. Yeah, I'm not prepared to</p> <p>6 comment on this paper without looking</p> <p>7 back at the methods.</p>		<p>5 A. Again, if you want to go</p> <p>6 into the results and the conclusions, we</p> <p>7 need to look at the methods. And I</p> <p>8 haven't looked at the methods in a long</p> <p>9 time.</p>	
<p>8 Q. Okay. Are those words on</p> <p>9 the page?</p>		<p>10 Q. Now, there was, without</p> <p>11 pulling out the CV, a substantial part of</p> <p>12 your CV that talks about all of your</p> <p>13 grants that you've done in the past and</p> <p>14 done -- or are doing now, right?</p>	
<p>10 A. Well, you've read the words</p> <p>11 on the page correctly.</p>		<p>15 A. Yes.</p>	
<p>12 Q. Okay.</p>		<p>16 Q. Okay. And without being</p> <p>17 pejorative about it, you all will go to</p> <p>18 third-party financiers and seek funding</p> <p>19 for research on different topics, right?</p>	
<p>13 A. But in order to interpret</p> <p>14 them I need more time on this paper.</p>		<p>20 MS. BROWN: Object to the</p> <p>21 form of the question.</p>	
<p>15 Q. Sure.</p>		<p>22 THE WITNESS: We have a</p> <p>23 diverse sort of body of funders</p> <p>24 that may include third parties, as</p>	
<p>16 The next page has a</p>			
<p>17 Figure 5. This Figure 5 shows lines</p> <p>18 between genetic factors and environmental</p> <p>19 exposure, right?</p>			
<p>20 A. Yes.</p>			
<p>21 Q. It has a direct line between</p> <p>22 environmental exposure to autism spectrum</p> <p>23 disorder, right?</p>			
<p>24 A. Yes.</p>			

<p>1 you say.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Okay. And before I get to</p> <p>4 the section dealing with Johnson &amp;</p> <p>5 Johnson funding some of your work, the</p> <p>6 government funds some of your work,</p> <p>7 right?</p> <p>8 A. The NIH provides grants to</p> <p>9 fund some of our work, yes.</p> <p>10 Q. And the process is, is that</p> <p>11 they may put out a, I'm going to call it</p> <p>12 a call bar, for lack -- we want people</p> <p>13 willing to research X, and then you can</p> <p>14 make a grant application and they can</p> <p>15 decide whether to deploy capital to fund</p> <p>16 your work on that particular subject,</p> <p>17 right?</p> <p>18 A. It's called a request for</p> <p>19 applications.</p> <p>20 Q. Okay. Let's just look at a</p> <p>21 couple of those. Exhibit 451.</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 451.)</p>	<p>Page 374</p>	<p>1 them, yes, the NICHD is interested</p> <p>2 in environmental risk factors.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Okay. And you know what the</p> <p>5 NICHD is. That would be the National</p> <p>6 Institute of Child Health and Human</p> <p>7 Development, right?</p> <p>8 A. Yes.</p> <p>9 Q. And then down at the bottom,</p> <p>10 it talks about the NIMH, and that's</p> <p>11 National Institute of Mental Health,</p> <p>12 right?</p> <p>13 A. Right.</p> <p>14 Q. Okay. Up at the top, the</p> <p>15 National Institute for Child Health and</p> <p>16 Human Development is seeking applications</p> <p>17 "that focus on environmental exposures</p> <p>18 that occurred prenatally during critical</p> <p>19 windows of fetal development and that</p> <p>20 impact early child development," right?</p> <p>21 A. So I think what this points</p> <p>22 to is the importance of exploring this</p> <p>23 area.</p> <p>24 Q. Okay.</p>	<p>Page 376</p>
<p>1 BY MR. WATTS:</p> <p>2 Q. This is from the Department</p> <p>3 of Health and Human Services. It's a</p> <p>4 research project grant. The funding</p> <p>5 opportunity title is "Environmental</p> <p>6 Contributors to Autism Spectrum</p> <p>7 Disorder," right?</p> <p>8 A. That's -- that's the title,</p> <p>9 yes.</p> <p>10 Q. If we look at Page 6 of 19.</p> <p>11 It says the "NICHD is interested in</p> <p>12 applications that focus on environmental</p> <p>13 exposures that occurred prenatally during</p> <p>14 critical windows of fetal development and</p> <p>15 that impact early childhood development."</p> <p>16 MS. BROWN: Let's give you a</p> <p>17 second to look at the document and</p> <p>18 to get to where counsel is.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Did I read that right?</p> <p>21 MS. BROWN: One second.</p> <p>22 THE WITNESS: So there is a</p> <p>23 huge body of priorities, according</p> <p>24 to different institutes, and among</p>	<p>Page 375</p>	<p>1 A. And there are many, many</p> <p>2 people that are looking to fund this</p> <p>3 area, because we need to learn a lot more</p> <p>4 about it.</p> <p>5 Q. Okay.</p> <p>6 A. And that's because most of</p> <p>7 it remains hypothetical.</p> <p>8 Q. And about five lines down it</p> <p>9 says, "Specifically, the National</p> <p>10 Institute of Child Health and Human</p> <p>11 Development is interested in studies</p> <p>12 focusing on prenatal exposures that alter</p> <p>13 the genetic or epigenetic profile and</p> <p>14 predispose to autism susceptibility;</p> <p>15 factors that alter the maternal or</p> <p>16 offspring microbiome and affect infant</p> <p>17 development; prenatal exposures to</p> <p>18 maternal disease, conditions, or</p> <p>19 medications; and the presence of</p> <p>20 significant inflammation in utero and how</p> <p>21 it might be quantitatively related to</p> <p>22 altered cellular function and development</p> <p>23 in the offspring."</p> <p>24 Did I read that right?</p>	<p>Page 377</p>

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1	A. There is an infinite number	
2	of factors that are important to study,	
3	and it may be relevant.	
4	Q. Did I read that right?	
5	A. The words you read are	
6	correct.	
7	Q. And then it says the	
8	"National Institute for Child Health and	
9	Human Development is also interested in	
10	specific gene-environment interactions	
11	influenced by prenatal exposures," right?	
12	A. These are important things	
13	to study.	
14	Q. Okay. And did Mount Sinai	
15	submit a grant application in response to	
16	this call for grants?	
17	MS. BROWN: Objection to the	
18	form.	
19	THE WITNESS: When was this	
20	call posted? These applications	
21	were due in 2015, so I can't be	
22	certain.	
23	Mount Sinai does investigate	
24	various risk factors for autism,	
	Page 379	
1	as you know.	
2	BY MR. WATTS:	
3	Q. Okay. Are you familiar with	
4	the Food and Drug Administration	
5	fast-tracking testing with respect to	
6	people's teeth and hair in order to	
7	collect information that can be used to	
8	predict autism diagnoses?	
9	A. I am roughly familiar with	
10	it. I am not an expert in this area.	
11	Q. Okay. Let me show you	
12	Exhibit 496.	
13	(Document marked for	
14	identification as Exhibit	
15	Kolevzon 496.)	
16	BY MR. WATTS:	
17	Q. It's a news article in	
18	Spectrum News by a Laura Dattaro	
19	entitled, "FDA Cites Hair-Based Autism	
20	Diagnostic Aid As a 'Breakthrough.'"	
21	Do you see that?	
22	MS. BROWN: Give him a	
23	minute to read it.	
24	MR. WATTS: Sure.	

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1	THE WITNESS: Okay.	
2	BY MR. WATTS:	
3	Q. On Page 2, the article says,	
4	"U.S. Food and Drug Administration, or	
5	FDA, has granted 'breakthrough device'	
6	designation to a hair-based test designed	
7	to aid autism diagnosis."	
8	Do you see that, sir?	
9	A. I do. What they are trying	
10	to do is develop a biomarker that will	
11	speed the path towards assessment.	
12	Q. Okay. The test, called	
13	StrandDx, analyzes the levels of	
14	chemicals in a strand of a child's hair	
15	to capture a snapshot of her ' exposome' -	
16	some of her cumulative environmental	
17	exposures and how she regulates certain	
18	essential nutrients. The measures	
19	suggest how a person's physiology	
20	responds to her environment, which can	
21	predict her chances of having autism,	
22	says Manish Arora."	
23	Dr. Arora is a scientist at	
24	Mount Sinai, right?	
	Page 381	
1	A. Yes.	
2	Q. It says, "Previous research	
3	from the test's makers suggested that	
4	autistic people's teeth contain atypical	
5	levels of some metals, and that	
6	information can be used to predict autism	
7	diagnoses," right?	
8	A. So, taken out of context,	
9	what that overlooks is that it wasn't the	
10	levels of the metals, it was the way that	
11	the metals regulate themselves. And the	
12	rhythmicity of the level -- of the	
13	metals.	
14	Q. Did I read it right?	
15	MS. BROWN: Let him finish	
16	his answer, please.	
17	THE WITNESS: This is a good	
18	example of when you read words on	
19	a page, the words can be	
20	misleading.	
21	And so, yes, you read them	
22	right, but they are misleading.	
23	BY MR. WATTS:	
24	Q. Okay. And then give you	

1 some more context. On Page 3 the article  
 2 says, "Analyzing hair samples makes it  
 3 possible to look at chemical exposures  
 4 and how the body regulates them over  
 5 time, Arora says, similar to how the  
 6 rings of a tree can reveal its age and  
 7 changing environment."

8 Do you see that, sir?

9 A. I see that's written. It's  
 10 generally very broad, and I don't  
 11 necessarily agree with it.

12 Q. Now, Dr. Manish Arora is a  
 13 scientist at Mount Sinai with whom you  
 14 have published scientific literature,  
 15 right?

16 A. Correct.

17 Q. You've done grants together  
 18 with him?

19 A. I don't think that's  
 20 correct.

21 Q. How many articles have you  
 22 published with Dr. Arora?

23 A. I would have to check.

24 Q. Okay. Do you find him to be

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1 a reputable scientist?

2 MS. BROWN: Objection to the  
 3 form.

4 THE WITNESS: I respect  
 5 Dr. Arora. He is a thoughtful and  
 6 well-intentioned scientist.

7 BY MR. WATTS:

8 Q. Okay. Would you agree that  
 9 Dr. Arora is a thoughtful and  
 10 well-intentioned scientist, employed by  
 11 Mount Sinai, is committed to  
 12 understanding pre- and postnatal  
 13 exposures that contribute to autism  
 14 spectrum disorder?

15 MS. BROWN: Objection to the  
 16 form.

17 THE WITNESS: I think it's  
 18 important for him to try to  
 19 understand ways of speeding the  
 20 way that we get people diagnosed.

21 I think that these  
 22 biomarkers in and of themselves  
 23 are not going to speak much to  
 24 etiology. But they may help

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1 people take the early signs more  
 2 seriously and lead to faster  
 3 diagnoses.

4 BY MR. WATTS:

5 Q. Okay. In trying to develop  
 6 a biomarker with respect to what we see  
 7 in a child's teeth or a child's hair, do  
 8 you agree that that is a biomarker that  
 9 is trying to look at the chemical  
 10 exposures that child has been subjected  
 11 to and how the body is regulating it over  
 12 time?

13 MS. BROWN: Objection to the  
 14 form.

15 THE WITNESS: So biomarkers  
 16 can be used for many different  
 17 things. They --

18 BY MR. WATTS:

19 Q. Including environment --  
 20 MS. BROWN: Well, let him  
 21 finish --

22 BY MR. WATTS:

23 Q. I'm sorry. I didn't mean to  
 24 interrupt.

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1 But including environment,  
 2 right?

3 A. So I think some biomarkers  
 4 can reflect environmental impacts. But  
 5 those environmental impacts don't  
 6 necessarily have anything to do with  
 7 etiology. They just are a marker.

8 Q. Sure.

9 A. So what's the cause and  
 10 what's the effect?

11 Q. They reflect exposure,  
 12 right?

13 MS. BROWN: Objection to the  
 14 form.

15 THE WITNESS: They  
 16 potentially reflect differential  
 17 exposure.

18 BY MR. WATTS:

19 Q. Okay. And if they reflect  
 20 differential exposure to an environmental  
 21 agent known to cause or play a role in  
 22 increasing the risk of ASD that can allow  
 23 a diagnosis at an earlier point in time  
 24 and allow for treatment of ASD at an

<p>1 earlier point, that's the goal, right?</p> <p>2 MS. BROWN: Objection to the</p> <p>3 form.</p> <p>4 THE WITNESS: So that's a</p> <p>5 serious hypothetical. Because</p> <p>6 there hasn't been, like, a</p> <p>7 specific environmental factor</p> <p>8 that's been established as a</p> <p>9 cause.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. So we obviously disagree</p> <p>12 with each other on that.</p> <p>13 But the premise of my</p> <p>14 question was, that's the goal of the</p> <p>15 environmental biomarker, through the hair</p> <p>16 and the teeth, to be able to diagnose</p> <p>17 something earlier, right?</p> <p>18 A. That is one of the goals,</p> <p>19 yeah.</p> <p>20 Q. Okay. Yeah. And along the</p> <p>21 lines of attempting to understand</p> <p>22 prenatal and postnatal exposures that</p> <p>23 contribute to autism, that's a laudatory</p> <p>24 goal, right?</p>	Page 386	<p>1 A. I think the point that</p> <p>2 everyone is still searching in many ways</p> <p>3 underscores how much we have left to</p> <p>4 know. Especially as it relates to</p> <p>5 acetaminophen.</p> <p>6 Q. With respect to these</p> <p>7 laudatory goals, do you believe that the</p> <p>8 government generally tries to fund</p> <p>9 research that is important to improving</p> <p>10 the treatment of autism spectrum</p> <p>11 disorder?</p> <p>12 MS. BROWN: Objection.</p> <p>13 Overbroad.</p> <p>14 THE WITNESS: I can't really</p> <p>15 comment on the government's</p> <p>16 motivations or priorities. I'm</p> <p>17 not involved in those decisions.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Let's go to Exhibit 521.</p> <p>20 (Document marked for</p> <p>21 identification as Exhibit</p> <p>22 Kolevzon 521.)</p> <p>23 BY MR. WATTS:</p> <p>24 Q. This is dated October 22nd</p>	Page 388
<p>1 A. A laudatory goal?</p> <p>2 Q. Yeah.</p> <p>3 A. I think we talked about the</p> <p>4 idea that if you can discover risk</p> <p>5 factors that are modifiable and reduce</p> <p>6 the risk, that would be something that's</p> <p>7 important to do.</p> <p>8 Q. Okay. Let's go back to 568,</p> <p>9 which is Wendy Chung's SPARK PowerPoint.</p> <p>10 Page 42.</p> <p>11 She ends, "We're committing</p> <p>12 to understanding" -- and the last thing</p> <p>13 that she's committed to understanding is</p> <p>14 pre- and postnatal exposure contributing</p> <p>15 to autism.</p> <p>16 Do you see that?</p> <p>17 A. I see that, yeah.</p> <p>18 Q. That's a laudatory goal,</p> <p>19 right?</p> <p>20 A. You know, we all have the</p> <p>21 same goal. I think the question is how</p> <p>22 do we interpret the science as it stands</p> <p>23 today.</p> <p>24 Q. Okay.</p>	Page 387	<p>1 of 2019.</p> <p>2 And this is a Mount Sinai</p> <p>3 press release. It says Mount Sinai has</p> <p>4 been "awarded \$25 million to study the</p> <p>5 environment's influence on people's</p> <p>6 health throughout their lifetimes."</p> <p>7 Do you see that?</p> <p>8 MS. BROWN: Let's just give</p> <p>9 him a minute to look at it,</p> <p>10 please.</p> <p>11 THE WITNESS: Yeah, this is</p> <p>12 Manish's Exposomic Institute.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. You said Manish's</p> <p>15 expo --</p> <p>16 A. Exposome Institute.</p> <p>17 Q. Institute?</p> <p>18 A. Yeah.</p> <p>19 Q. Okay. And just so that</p> <p>20 we've got it in the record. Exposomic</p> <p>21 means what?</p> <p>22 A. It's kind of a word that I</p> <p>23 only first heard recently. But as I</p> <p>24 understand it, it relates to the universe</p>	Page 389

<p style="text-align: right;">Page 390</p> <p>1 of environmental exposures, like the 2 genome or the exposome. 3 Q. Okay. So exposomic is the 4 way in which environmental exposures 5 affects the genome? 6 MS. BROWN: Objection. 7 Misstates testimony. 8 THE WITNESS: That's not 9 what I said, and that's not how I 10 understand it. 11 BY MR. WATTS: 12 Q. Okay. When asked during 13 your trial testimony in Galveston earlier 14 this year about Manish Arora securing 15 this \$25 million grant, that was to 16 explore environmental factors in autism 17 spectrum disorder, wasn't it? 18 MS. BROWN: Objection to the 19 form of the question. 20 THE WITNESS: Can you repeat 21 the question? 22 BY MR. WATTS: 23 Q. Sure. 24 MR. WATTS: Let's put up</p>	<p style="text-align: right;">Page 392</p> <p>1 spends the money or what he's working on. 2 Q. Let's go to Exhibit 565. 3 (Document marked for 4 identification as Exhibit 5 Kolevzon 565.) 6 MR. WATTS: And just blow up 7 the top, starting with Mount 8 Sinai. 9 MS. BROWN: Okay. Let's 10 just give him a minute to look at 11 the hardcopy if he wants to. 12 BY MR. WATTS: 13 Q. This is a press release 14 dated June 30, 2022, from Mount Sinai, 15 entitled, "Clinical Neuroscience 16 Fellowship Explores Links Between 17 Pregnancy Exposures and Autism Spectrum 18 Disorder." 19 That's the title, right? 20 A. Mm-hmm. 21 Q. And then if we go down to 22 the first paragraph, we can see a 23 photograph of a gentleman that I think 24 you're familiar with, Vahe Khachadourian.</p>
<p style="text-align: right;">Page 391</p> <p>1 Exhibit 513, Page 24, Line 23, through 2 25, Line 2. 3 BY MR. WATTS: 4 Q. You're on the stand on the 5 afternoon of February 16, 2023, and you 6 are asked about this grant. 7 (Document marked for 8 identification as Exhibit 9 Kolevzon 513.) 10 BY MR. WATTS: 11 Q. Have you talked to Dr. Arora 12 about what he's doing with that 13 \$25 million that he achieved a grant for? 14 A. No, not about the grant. I 15 was aware that he got the grant, as I 16 said. I did not know the grant amount. 17 My focus with Dr. Arora is 18 very sort of narrow as it relates to the 19 teeth study. 20 Q. With this grant he was able 21 to hire people to study the link between 22 the pregnancy exposures and autism 23 spectrum disorder, wasn't he? 24 A. I'm not aware of how he</p>	<p style="text-align: right;">Page 393</p> <p>1 You co-authored the comorbidities paper 2 about autism spectrum disorder with him, 3 right? 4 A. Yes. 5 Q. And he's the -- Mount 6 Sinai's first recipient of National 7 Institute of Mental Health's T32 8 Postdoctoral Research Fellowship, right? 9 A. That's what it says. 10 Q. And the Mount Sinai press 11 release says, "A large body of research 12 suggests that environmental exposures 13 during pregnancy may be associated with 14 autism in offspring," right? 15 A. Yes. The next sentence 16 says, "But those studies barely scratch 17 the surface of the complex task of 18 understanding the cause of autism 19 spectrum disorder." 20 Q. Then it mentions his mentor 21 Magdalena Janecka, who is working on that 22 intricate puzzle, right? 23 A. Yeah, that complex puzzle 24 that we're barely able to scratch the</p>

1 surface on.

2 Q. And if we look at  
3 Exhibit 566.

4 (Document marked for  
5 identification as Exhibit  
6 Kolevzon 566.)

7 BY MR. WATTS:

8 Q. Dr. Janecka is working on  
9 the subject of functional epidemiology.  
10 And the goal of her research "is to  
11 better understand why certain parental  
12 and early-life factors are associated  
13 with the risk of neurodevelopmental  
14 disorders in children," right?

15 A. I've got to open it up.

16 MS. BROWN: Let's let him  
17 open it up and look at it.

18 Oh, my goodness. If you  
19 guys could see the print on this.

20 MR. WATTS: Guys, just stay  
21 focused on the screen. I realize  
22 it's small.

23 MS. BROWN: Yeah, I  
24 understand. But just give him a

1 minute. Give him a minute.

2 MR. WATTS: Yeah, just look  
3 at the screen -- I'm giving him a  
4 minute, but look at the screen.

5 MS. BROWN: Well, okay,  
6 then, I'm going to object.  
7 Because what you have on the  
8 screen is selected, highlighted  
9 parts of an exhibit that you  
10 provided us that you couldn't even  
11 read with a magnifying glass.

12 So just give him a minute --

13 MR. WATTS: Overruled.

14 Let's go.

15 I am giving him a minute. I  
16 just don't want you talking.

17 MS. BROWN: And if he wants  
18 to look at the rest of it, he'll  
19 have to ask for you to scroll  
20 down.

21 MR. WATTS: Look all you  
22 want.

23 MS. BROWN: Presumably, you  
24 want truthful and accurate

1 testimony.

2 MR. WATTS: I want him  
3 testifying, not you.

4 MS. BROWN: I'm not  
5 testifying.

6 MR. WATTS: You know you're  
7 still my buddy, but you need to  
8 kind of let him go.

9 MS. BROWN: I like you, too.  
10 But I can't read this.

11 MR. WATTS: You're the one  
12 that wanted paper. I've got a big  
13 screen.

14 Let's go.

15 THE WITNESS: Can you repeat  
16 the question?

17 BY MR. WATTS:

18 Q. Sure.

19 Dr. Janecka, working under  
20 the title "Functional Epidemiology," as  
21 part of the functional epidemiology lab  
22 of the Seaver Autism Center at the Icahn  
23 School of Medicine.

24 Who is the head of the

1 Seaver Autism Center?

2 A. Joseph Buxbaum.

3 Q. Okay. Have you ever been  
4 the head of it?

5 A. No.

6 Q. What is your role at the  
7 Seaver Autism Center?

8 A. I'm the clinical director.

9 Q. Okay. And is Joseph Buxbaum  
10 your boss?

11 A. Yes, one of many.

12 Q. And so we've got the  
13 functional epidemiology lab at the Seaver  
14 Autism Center. And, "The goal of our  
15 research is to better understand why  
16 certain prenatal and early-life factors  
17 are associated with a risk of  
18 neurodevelopmental disorders in  
19 children," right?

20 A. So it's very hard for me to  
21 comment on sentences that are lifted from  
22 a web page.

23 But if you're asking me if  
24 you read the sentences correctly, the

<p>1 answer is yes.</p> <p>2 Q. Is autism spectrum disorder</p> <p>3 a neurodevelopmental disorder in</p> <p>4 children?</p> <p>5 A. As defined by the DSM, yes.</p> <p>6 Q. Okay. Let's go back to</p> <p>7 biomarkers for a second. You remember we</p> <p>8 were talking about teeth and hair to try</p> <p>9 to get a biomarker showing exposure to</p> <p>10 environmental agents?</p> <p>11 A. So we talked about the</p> <p>12 studies in teeth and hair to show that</p> <p>13 there are potentially different levels,</p> <p>14 or different rhythms between levels, that</p> <p>15 distinguish between autism and not</p> <p>16 autism.</p> <p>17 Q. Okay. I want to simplify</p> <p>18 our discussion on what a biomarker is.</p> <p>19 Now, this is going to surprise you</p> <p>20 because I'm the picture of cardiovascular</p> <p>21 health. But every once in a while, I'll</p> <p>22 get my blood taken to get a blood screen,</p> <p>23 right. And you can get all sorts of data</p> <p>24 with respect to what your levels are on</p>	Page 398	<p>1 representing biomarkers that are</p> <p>2 linked to the cause of a disease</p> <p>3 that indicate increased risk.</p> <p>4 That doesn't necessarily mean that</p> <p>5 there aren't biomarkers that</p> <p>6 simply identify cases that have</p> <p>7 already been established.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Okay. Fair enough.</p> <p>10 So your research is focused</p> <p>11 on developing biomarkers, among other</p> <p>12 things, right?</p> <p>13 A. Yes, I'm very interested in</p> <p>14 biomarkers.</p> <p>15 Q. Okay. And I think that one</p> <p>16 of your prior reports said that you've</p> <p>17 had approximately \$4.3 million in grant</p> <p>18 funding as a principal investigator on a</p> <p>19 variety of different things, including</p> <p>20 discovering biomarkers for ASD, right?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. And I think you</p> <p>23 described that effort as, we're trying to</p> <p>24 think about other factors that kind of</p>	Page 400
<p>1 different things.</p> <p>2 Those are biomarkers, right?</p> <p>3 A. Those are examples of</p> <p>4 biomarkers, yes.</p> <p>5 Q. So, you know, for example,</p> <p>6 hemoglobin A1C is a measure in your blood</p> <p>7 for a risk of diabetes, right?</p> <p>8 A. It's a biomarker for</p> <p>9 diabetes, yes.</p> <p>10 Q. Blood pressure for heart</p> <p>11 disease?</p> <p>12 A. Yes.</p> <p>13 Q. Cholesterol for heart</p> <p>14 disease?</p> <p>15 A. Those are all examples of</p> <p>16 biomarkers.</p> <p>17 Q. Okay. And so by analogy,</p> <p>18 those are examples of biomarkers that, if</p> <p>19 they are too high, are likely to cause an</p> <p>20 increased risk of heart disease for my</p> <p>21 example, right?</p> <p>22 MS. BROWN: Objection to the</p> <p>23 incomplete hypothetical.</p> <p>24 THE WITNESS: So you are</p>	Page 399	<p>1 correspond to autism that we can use to</p> <p>2 predict autism, right?</p> <p>3 A. Yes, I'm happy to talk more</p> <p>4 about those.</p> <p>5 Q. Okay. Now I want to play a</p> <p>6 video of you at 460.</p> <p>7 (Document marked for</p> <p>8 identification as Exhibit</p> <p>9 Kolevzon 460.)</p> <p>10 MR. WATTS: And this is the</p> <p>11 Advances in Autism conference in</p> <p>12 2017.</p> <p>13 (Video played.)</p> <p>14 DR. KOLEVZON: You can't</p> <p>15 just think about autism as one</p> <p>16 group. It's really important for</p> <p>17 us to develop and validate</p> <p>18 biomarkers. I think that is going</p> <p>19 to be the key to clinical trial</p> <p>20 success, as I said.</p> <p>21 (Video playback ended.)</p> <p>22 BY MR. WATTS:</p> <p>23 Q. What you said is true,</p> <p>24 right?</p>	Page 401

<p>1 A. What I'm talking about  2 there, electrophysiological biomarkers  3 that have nothing whatsoever to do with  4 the etiology or cause of autism.  5 Q. Okay.  6 A. They are measuring autism  7 and, potentially, autism symptoms and a  8 way of identifying subgroups and  9 predicting treatment response.  10 Q. Now, I noticed that last  11 night I got a Supplemental Rule 26(a)  12 disclosure. I don't know whether you  13 know what that means, but it says that  14 you looked at more stuff. Okay?  15 A. Okay.  16 Q. And I think it listed, you  17 know, various reports, the deposition  18 transcripts for the expert depos that  19 have been taken thus far, and then I  20 think there were three new studies that  21 we'll talk about in a little.  22 You read Dr. Chung's  23 transcript of the deposition taken on the  24 30th of August 2023, the rough</p>	<p>Page 402</p>	<p>1 her testimony.  2 BY MR. WATTS:  3 Q. I realize it wasn't  4 consistent with her testimony after she  5 got hired in this case.  6 But do you know how many  7 different PowerPoints Dr. Chung has used  8 with the environmental factors circle,  9 the identical side of the genetic  10 factors?  11 MS. BROWN: Well, I object  12 on a number of grounds, including  13 argumentative, and it lacks  14 foundation. It's false, and it  15 misrepresents the testimony and  16 the document.  17 BY MR. WATTS:  18 Q. Go ahead, sir.  19 A. So I'm not aware of how many  20 PowerPoints and exactly what the size of  21 her circles are.  22 But I am aware of the  23 article that she's written and the body  24 of literature that suggest very</p>	<p>Page 404</p>
<p>1 transcript?  2 A. I read most of it.  3 Q. Okay. Do you remember the  4 discussion about the slide with the  5 concentric circles of genetics and  6 environment?  7 A. I do, yes.  8 Q. Let me put up an example,  9 that Exhibit 568.  10 This is the SPARK and Future  11 of Autism research, April 25, 2023. And  12 go to Page 5.  13 And does this comport with  14 what you were reading in the transcript  15 when we were asking about this slide?  16 MS. BROWN: Objection.  17 Lacks foundation.  18 THE WITNESS: Comport, in a  19 critical piece of the slide, to  20 me, is the implication that  21 genetic factors and environmental  22 factors are roughly equal, which,  23 of course, that's 100 percent not  24 the case, and not consistent with</p>	<p>Page 403</p>	<p>1 consistently that 80 to 90 percent of  2 autism is genetic in origin.  3 MR. WATTS: Objection.  4 Nonresponsive.  5 MS. BROWN: Objection.  6 BY MR. WATTS:  7 Q. Here's my question. Do you  8 know how many times this slide has been  9 used in her PowerPoints over the last  10 decade?  11 MS. BROWN: How would he  12 possibly know that? I object.  13 MR. WATTS: Object to form.  14 Come on.  15 MS. BROWN: I object to the  16 form.  17 BY MR. WATTS:  18 Q. All right. Now let's go on.  19 You can tell me whether you  20 possibly know that.  21 A. So the size of the circles  22 are irrelevant. But, no, I am not aware  23 of how many times she's presented on this  24 particular slide.</p>	<p>Page 405</p>

<p style="text-align: right;">Page 406</p> <p>1 Q. So the relevance to me is 2 that every time she gives a PowerPoint, 3 she gives it to an audience. 4 Does that make sense? 5 A. That makes sense. 6 Q. And every time you use a 7 PowerPoint with genetic factors having a 8 circle the same size as environmental 9 factors, you are communicating messaging 10 to your audience that is seeing the 11 PowerPoint? 12 MS. BROWN: Object. Lacks 13 foundation. 14 BY MR. WATTS: 15 Q. Make sense? 16 A. So the intent behind this 17 slide is to teach a lay audience, and the 18 size of the circles is not what's 19 important. It's what comes out of her 20 mouth that's important. 21 Q. I mean, part of what we're 22 doing here is we put the cards on the 23 table. Is what comes out of your mouth 24 after you are retained as an expert in</p>	<p style="text-align: right;">Page 408</p> <p>1 is adapting her opinions about the 2 genetics of autism based on being 3 paid, and that is factually 4 incorrect, because her opinions 5 are based on literature and based 6 on decades of research and have 7 been consistent since the time 8 that she started in this career. 9 BY MR. WATTS: 10 Q. Do you think it's fair for a 11 lawyer like me to probe what people who 12 are experts are saying in litigation 13 versus saying what they said before 14 litigation? 15 A. Absolutely. 16 Q. Okay. And so, for example, 17 if you said something in a book chapter 18 before you were hired, that's a 19 legitimate area for me to probe, and then 20 you can give your reasons for that, 21 right? 22 MS. BROWN: Objection to the 23 form. 24 THE WITNESS: I think it's</p>
<p style="text-align: right;">Page 407</p> <p>1 litigation -- you know, there may be some 2 secondary bias that is alleged on both 3 sides. 4 You've read all the 5 depositions, right? 6 A. No. 7 Q. You haven't read my good 8 friend Mr. Murdica, before you started 9 taking money from plaintiffs' lawyers, 10 blah blah blah. Did you see any of that? 11 MS. BROWN: Objection to the 12 form. 13 THE WITNESS: I can tell you 14 there were depositions that I 15 read. 16 BY MR. WATTS: 17 Q. Okay. And, then, the point 18 is, is that these PowerPoints were given 19 before anybody was hired by lawyers in 20 this case. Can we agree to that? 21 MS. BROWN: Objection. 22 Calls for speculation. 23 THE WITNESS: I think what 24 you're implying is that Dr. Chung</p>	<p style="text-align: right;">Page 409</p> <p>1 legitimate for you to probe and 2 ask questions. I just think the 3 questions need to be reasonable. 4 BY MR. WATTS: 5 Q. And it's reasonable to say, 6 you know what, I'm looking at a 7 PowerPoint slide that an expert for the 8 defense has used in 2023, in 2019, in 9 2017, in 2014, and communicated to crowd 10 after crowd after crowd before she was 11 retained as an expert in this case. 12 That's a reasonable inquiry, 13 don't you think? 14 A. No. 15 MS. BROWN: Objection to the 16 form. 17 BY MR. WATTS: 18 Q. Okay. 19 A. I absolutely do not think 20 it's reasonable to infer by the size of 21 circles what the genetic component of 22 autism is. 23 Q. Sometimes you can't believe 24 your lying eyes, huh?</p>

<p>1 MS. BROWN: Objection to the 2 form. It's argumentative. 3 And our realtime has stopped 4 working. Could we just pause to 5 get it fixed? 6 MR. WATTS: Sure. 7 THE WITNESS: I'm sorry. I 8 don't know what -- can you clarify 9 what does it mean? 10 BY MR. WATTS: 11 Q. You've never heard "believe 12 your lying eyes"?</p> <p>13 A. I think I've heard it. I 14 don't want to assume. Are you calling me 15 a liar? 16 Q. It's a great phrase down in 17 Texas. Don't take offense. 18 MS. BROWN: Can we go off 19 for one second and just get this 20 working? 21 MR. WATTS: Sure. Sure. 22 THE VIDEOGRAPHER: The time 23 right now is 2:19 p.m. We are off 24 the record.</p>	<p>Page 410</p> <p>1 A. Yes. 2 Q. And as we look at Page 32, 3 Section A deals with temporality; is that 4 right? 5 A. Yes. 6 Q. Page 33, Section B deals 7 with "Strength of Association"?</p> <p>8 A. Yes. 9 Q. Page 34, C is "Consistency," 10 right? 11 A. Yes. 12 Q. D is "Dose Response," right? 13 A. Correct. 14 Q. Page 35, E is "Specificity"?</p> <p>15 A. Yes. 16 Q. Page 35, F is "Biological 17 Plausibility"?</p> <p>18 A. Yes. 19 Q. G is "Coherence"?</p> <p>20 A. Yes. 21 Q. Page 36, H is "Experiment"?</p> <p>22 A. Yes. 23 Q. And I is "Analogy"; is that 24 right?</p>
<p>1 (Short break.) 2 THE VIDEOGRAPHER: The time 3 right now is 2:27 p.m. Back on 4 the record. 5 (Document marked for 6 identification as Exhibit 7 Kolevzon 504.) 8 BY MR. WATTS: 9 Q. Doctor, I want to switch 10 gears with you and show you Exhibit 504. 11 This was your expert report dated 12 June 3rd of 2022 in the Palmquist versus 13 Hain case. Is that true? 14 A. Yes. 15 Q. And we can see it's in the 16 Southern District of Texas. This is the 17 so-called Galveston matter that we've 18 been discussing, right? 19 A. Okay. 20 Q. And I'd like to take you to 21 Page 32 of that report. 22 And as we look at this 23 report, Section VI has what's called a 24 "Bradford Hill Causation Analysis"?</p>	<p>Page 411</p> <p>1 A. Those are all the sections, 2 yeah. 3 Q. Okay. So in those five 4 pages, 32, 33, 34, 35, and 36, you did a 5 Bradford Hill analysis to suggest 6 exposure to heavy metals in baby food 7 could not be causative of autism, right? 8 A. That's what I did for this 9 case, yes. 10 Q. Okay. And there's something 11 you said I want to talk to you about, and 12 that is the idea of temporality. 13 And I -- let me paraphrase. 14 You tell me if I, basically, got it 15 right. 16 And that is that your 17 understanding of autism is that it's 18 conceptualized in utero, even if it's not 19 evident until later on, right? 20 A. Correct. 21 Q. And, therefore, a baby 22 already outside of the uterus ingesting 23 baby food with allegedly too much metals 24 in it failed the test of temporality</p>

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1 because the conceptualization of autism  
2 was already present, right?  
3 A. As it relates to autism,  
4 yes.  
5 Q. Okay. Now, let's put that  
6 aside for a second. And if we go to your  
7 report -- you didn't do a  
8 section-by-section Bradford Hill analysis  
9 of this particular case; is that right?  
10 A. So my review of the  
11 literature in this particular case did  
12 not indicate the need for Bradford Hill.  
13 Q. Okay. Fair enough.  
14 So the answer is you didn't  
15 do one, right?  
16 A. I used Bradford Hill  
17 framework.  
18 Q. But you didn't list them all  
19 out and talk about each of them. Is that  
20 fair?  
21 A. It was very hard to get past  
22 the consistency one.  
23 Q. Okay. Now, I want to talk  
24 to you about temporality, just for a

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1 A. Off the top of my head, I'm  
2 not.  
3 Q. Okay. Let me -- hold on a  
4 just second, because I want to be  
5 specific about this.  
6 If you look at Page 24 of  
7 your report, Exhibit 403.  
8 And you, in Footnote 50 --  
9 A. We're talking about the  
10 Payne report.  
11 Q. No, your report in this  
12 case.  
13 Exhibit 403. Page 24,  
14 Footnote 50.  
15 For the proposition,  
16 "Because it's generally established that  
17 altered neurodevelopment in ASD begins in  
18 utero, and likely in the first trimester,  
19 challenges remain in determining which  
20 neurobiological features cause ASD versus  
21 which are a consequence."  
22 And then Footnote 50 cites  
23 to a study by Prem entitled  
24 "Dysregulation of Neurite Outgrowth and

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1 second, and developmental time tables in  
2 utero. Okay?  
3 You've testified -- well,  
4 you said in your report, Exhibit 403,  
5 that it's generally established that  
6 altered neurodevelopment in autism  
7 spectrum disorder begins in utero and  
8 likely in the first trimester; is that  
9 right?  
10 A. Yes.  
11 Q. Does it continue through the  
12 second trimester?  
13 MS. BROWN: Objection to  
14 form.  
15 THE WITNESS: So the brain  
16 is developing throughout all three  
17 trimesters. So the initial insult  
18 occurs, as I said, when sperm  
19 meets egg, but the manifestations  
20 of that insult can certainly occur  
21 throughout utero.  
22 BY MR. WATTS:  
23 Q. Okay. You cited a paper  
24 called Prem. Are you familiar with that?

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1 Cell Migration in Autism and Other  
2 Neurodevelopmental Disorders"?  
3 A. Mm-hmm. Yeah.  
4 Q. Now, the Prem article I  
5 marked as Exhibit 485.  
6 (Document marked for  
7 identification as Exhibit  
8 Kolevzon 485.)  
9 BY MR. WATTS:  
10 Q. And what I'm going to do --  
11 there's a -- let me just kind of  
12 pre-stage what I'm doing. There's a  
13 variety of time tables that are listed in  
14 Prem. I just want to see if you agree or  
15 disagree with those particular time  
16 tables.  
17 A. All right. It's been a  
18 while since --  
19 Q. I mean, you're welcome to  
20 read or I can just take you one by one.  
21 Whatever you want me to do --  
22 A. Let me take a look at the  
23 abstract.  
24 Q. Yeah. Yeah, that's fine.

<p>1 That's where I'm going with these  2 particular time tables.  3 A. Okay.  4 Q. Are you ready?  5 A. I am.  6 Q. Okay. First question is, in  7 the overview, about three lines from the  8 bottom, it says, "For ASD, more recent  9 genetic studies have also suggested that  10 risk genes largely confer" -- "converge  11 upon the developing human cerebral cortex  12 between Weeks 8 and 24 in utero."  13 Do you agree with that?  14 A. So this is not an area of my  15 expertise. This is the pathology.  16 Q. Okay. Let's go to 110.  17 The next one.  18 In the middle of the page it  19 says, "During the 8 to 24-week window of  20 human neurodevelopment, neural precursor  21 cells are actively undergoing  22 proliferation, migration, and early  23 differentiation to form the basic  24 cytoarchitecture of the brain."</p>	<p>Page 418</p>	<p>1 126. "Moreover, the  2 importance of very early cortical  3 development was recently confirmed by the  4 large scale, over 35,000 samples, whole  5 genome sequencing study by, Footnote 167,  6 that shows that 80 percent of 102  7 high-risk autism spectrum disorder genes  8 are expressed in the forebrain by  9 23 weeks gestation and regulate maturing  10 or mature neurons of both excitatory or  11 inhibitory lineages. Thus, while  12 ASD-risk genes may have different roles  13 in the adult brain, a majority of these  14 risk genes seem to play a key role in the  15 regulation of neurodevelopment."  16 With respect to the 23 weeks  17 after gestation with ASD genes being  18 expressed in the forebrain, is that  19 something you agree with or you just  20 don't know?  21 A. I don't know.  22 Q. Okay. Page 135, down at the  23 bottom, and the top of 136.  24 It talks about, "More</p>	<p>Page 420</p>
<p>1 Agree, disagree, or don't  2 know?  3 A. I generally understand that  4 to be a true statement.  5 Q. Okay. Go to Page 111.  6 "The formation of the neural  7 tube occurs during early gestation in  8 humans, 3 to 4 weeks."  9 Agree or disagree?  10 A. I don't know the answer to  11 that.  12 Q. Okay. Page 112, down at the  13 bottom.  14 "Migration of cortical  15 neurons occurs between E-19 and E-22 in  16 rats, but in humans migration begins at  17 18 weeks postconception and can continue  18 until Week 36, though most cortical  19 neurons are in place by 24 weeks."  20 Agree, disagree, don't know?  21 A. You know, sitting here, I  22 don't know for sure, so I don't want to  23 guess.  24 Q. Okay. Fair enough.</p>	<p>Page 419</p>	<p>1 recently, with wider use of 'omic'  2 studies and more sophisticated modeling  3 tools, pathway analysis studies of  4 idiopathic and syndrome-associated ASD  5 genes have uncovered their" -- "have  6 uncovered their convergence onto the  7 cerebral cortex of the developing  8 mid-fetal brain (8 to 24 weeks old)."  9 Do you agree with that?  10 A. Again, the timing of all of  11 these events, I'm not comfortable  12 testifying to.  13 Q. Okay. I think the same  14 answer, but let me ask.  15 Interesting --  16 "Interestingly, in human brain  17 development, it is believed that the  18 first synapses begin to form between  19 20 and 24 weeks of gestation and the peak  20 of synapse formation occurs postnatally."  21 Agree, disagree, or don't  22 know?  23 A. I can't be certain.  24 Q. Okay. And then on Page 136.</p>	<p>Page 421</p>

<p>1                   "Indeed, in the 8 to 24-week  2 period of brain development, we find that  3 NPCs are proliferating, migrating, and  4 differentiating to form the brain."</p> <p>5                   Any thoughts?</p> <p>6                   A. I can't know for sure.</p> <p>7                   Q. Okay. I want to talk to you  8 about the concept of plausible biological  9 mechanisms.</p> <p>10                  And if I could, I want to go  11 back to 494, which is the book chapter.  12 It's in the second edition of the Autism  13 Spectrum Disorder.</p> <p>14                  And you see where it says,  15 "We present plausible biological  16 mechanisms linking the" -- "those risk  17 factors to autism spectrum disorder"?</p> <p>18                  A. I see where it's written.</p> <p>19                  Q. And then there's a list of  20 prenatal exposures and maternal  21 conditions, including antidepressants and  22 depression, additional prenatal exposures  23 and maternal -- additional prenatal  24 exposures and maternal conditions.</p>	<p>Page 422</p> <p>1 paternal and maternal age."</p> <p>2                   Is that right?</p> <p>3                   A. And those are a couple of  4 good examples where biological mechanisms  5 are plausible.</p> <p>6                   Q. But they are listed under  7 the presentation of biological plausible  8 mechanisms in the book chapter, right?</p> <p>9                   A. So the book chapter says  10 that they are going to present some  11 biological mechanisms. And then the book  12 chapter lists a whole bunch of different  13 areas but doesn't necessarily imply that  14 each of those areas has a biological  15 mechanism that's plausible.</p> <p>16                  Q. Yeah. Except that it  17 follows, "We present plausible biological  18 mechanisms linking those risk factors to  19 autism spectrum disorder," didn't it?</p> <p>20                  A. It does. But there are not  21 plausible biological mechanisms linking  22 all of those risk factors to autism.</p> <p>23                  Q. As we go back to the Elmo,  24 all of that happened right after you all</p>
<p>Page 423</p> <p>1 Gestational diabetes. Maternal high body  2 mass index. Fetal distress and cesarian  3 delivery. Viral and bacterial  4 infections. Acetaminophen. Metals.  5 Folic acid. And air pollution.</p> <p>6                  Were those all listed in the  7 book chapter that carries your name as a  8 co-author in 2022?</p> <p>9                  A. Those were listed, yeah.</p> <p>10                 Q. And then there's a section  11 entitled "Perinatal Risk Factors."</p> <p>12                 Low birth weight. Preterm  13 birth. Fetal growth restriction, being  14 short for gestational age.</p> <p>15                 Were those all listed as  16 prenatal risk factors for autism spectrum  17 disorder?</p> <p>18                 A. So they've all been listed,  19 but they don't all have plausible  20 biological mechanisms.</p> <p>21                 Q. Okay. And then it says,  22 "Parental Risk Factors: advanced maternal  23 age, advanced paternal age, potential  24 etiologic mechanisms of advancing</p>	<p>Page 425</p> <p>1 said, "We present biological plausible  2 mechanisms linking these risk factors to  3 autism spectrum disorder," right?</p> <p>4                  A. Well, the fact that the two  5 things occur next to each other in a  6 chapter doesn't mean that one explains  7 the other.</p> <p>8                  Q. Hmm. Let's go through a  9 few of these and just talk about it for a  10 second.</p> <p>11                 Folic acid reduces the risk  12 of autism spectrum disorder, right?</p> <p>13                 A. No.</p> <p>14                 Q. Let me show you Exhibit 464.  15 This is a newsletter from the Seaver  16 Autism Center where you are the clinical  17 director, right?</p> <p>18                 A. I am.</p> <p>19                 (Document marked for  20 identification as Exhibit  21 Kolevzon 464.)</p> <p>22 BY MR. WATTS:</p> <p>23                 Q. "Working with collaborators  24 in Israel, and using data from a national</p>

<p style="text-align: right;">Page 426</p> <p>1 healthcare provider, our team examined 2 the correlation between intake of folic 3 acid and multivitamin supplements with 4 the risk of autism spectrum disorder in 5 the offspring."</p> <p>6 Did I read that right?</p> <p>7 A. Hold on. I've got to get to 8 the actual section.</p> <p>9 Yeah, there's a lower-odds 10 ratio of having autism among women who 11 took folic acid.</p> <p>12 Q. Okay. And let's look at 13 what was said next.</p> <p>14 "Of the 45,300 children in 15 the study, 570, or 1.3 percent, received 16 a diagnosis of autism spectrum disorder. 17 Maternal use of folic acid and 18 multivitamin supplements before pregnancy 19 was associated with a 61 percent lower 20 risk for autism spectrum disorder in 21 their children compared with children of 22 mothers who did not use the supplements."</p> <p>23 Did I read that right?</p> <p>24 A. You read that right. And</p>	<p>1 results need to be interpreted 2 cautiously, because other factors, such 3 as lifestyle choices, could play a role."</p> <p>4 Q. Okay. But let's --</p> <p>5 A. More studies should be 6 conducted to validate these findings.</p> <p>7 Q. Okay. But let's take it 8 step by step.</p> <p>9 First of all, does the 10 Seaver Autism Center newsletter in 2018 11 say, "Maternal use of supplements during 12 pregnancy was also associated with a 13 73 percent lower risk for ASD"?</p> <p>14 Did I read that right?</p> <p>15 A. The Seaver Autism Center 16 newsletter highlights findings from one 17 study.</p> <p>18 Q. Yep. And then --</p> <p>19 A. -- and shows --</p> <p>20 MS. BROWN: Let him finish.</p> <p>21 THE WITNESS: -- this 22 result.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. And that happened in 2018,</p>
<p style="text-align: right;">Page 427</p> <p>1 this is a great example of where, 2 potentially, there's something else that 3 led the mothers to take folic acid in the 4 first place that protected them from 5 having a child with autism.</p> <p>6 So this finding, in and of 7 itself, is not sufficient to say folic 8 acid reduces the risk of autism.</p> <p>9 Q. Okay. But Mount Sinai says 10 if you take folic acid and multivitamins 11 before pregnancy, you've got a 61 percent 12 of lower risk of autism spectrum disorder 13 in your children, right?</p> <p>14 A. No.</p> <p>15 MS. BROWN: Objection. That 16 misstates the document.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay. And then the -- it 19 says, "Maternal use of supplements during 20 pregnancy was also associated with a 21 73 percent lower risk of autism spectrum 22 disorder," right?</p> <p>23 A. The next sentence, which I 24 think is the important one, is that, "The</p>	<p>1 right? That's -- that's when this is 2 dated, up in the upper left-hand corner?</p> <p>3 A. Yeah.</p> <p>4 Q. And in February of 2018 in 5 the Poston case, did you say taking 6 prenatal vitamins is -- things are 7 globally good because they reduce risk?</p> <p>8 A. You've got to be more 9 specific, sorry.</p> <p>10 MR. WATTS: Sure.</p> <p>11 Exhibit 468, Page 83, 7 through 12 20.</p> <p>13 (Document marked for 14 identification as Exhibit 15 Kolevzon 468.)</p> <p>16 THE WITNESS: Yeah.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay.</p> <p>19 A. Right. Just like you don't 20 want to smoke during pregnancy. But this 21 isn't necessarily related to autism.</p> <p>22 Q. So they -- they -- it 23 doesn't have anything to do with autism?</p> <p>24 A. Well, so you want to reduce</p>

<p style="text-align: right;">Page 430</p> <p>1 risk factors in general, modifiable risk 2 factors. 3 Just like you don't want to 4 smoke during pregnancy, you also want to 5 take prenatal vitamins. Those things are 6 globally good because they reduce risk -- 7 Q. But you talk -- 8 A. -- of all kinds of things, 9 including neural tube defects. 10 Q. But you're talking about 11 studies of people with autism. 12 Do you see that there? 13 A. I'm talking, in the first -- 14 the first section, in the second part I'm 15 expanding. It's, like, an obvious thing 16 you want to do. 17 Q. Well -- 18 A. Right? So on one hand you 19 specifically want to reduce the risk of 20 autism. On the other hand, just like we 21 take prenatal vitamins, you want to 22 reduce the risk of bad outcomes, hard 23 stop. 24 Q. Does the data show that</p>	<p style="text-align: right;">Page 432</p> <p>1 you're taking some isolated 2 findings that are important and 3 worth considering, and you're 4 implying that you then want to 5 make a change in your practice, 6 like take Vitamin D. 7 But we are not at that 8 point, as a field. 9 BY MR. WATTS: 10 Q. It's probably a good idea to 11 take Vitamin D if you want to reduce the 12 risk of autism, right? 13 MS. BROWN: Objection. 14 Asked and answered. Inconsistent. 15 THE WITNESS: I would never 16 tell a patient that if they took 17 Vitamin D during pregnancy, they 18 are going to reduce their risk of 19 autism. 20 BY MR. WATTS: 21 Q. Would you tell a jury in 22 Galveston, Texas, earlier this year, 23 Vitamin D levels are low in autism and 24 you can supplement Vitamin D to reduce</p>
<p style="text-align: right;">Page 431</p> <p>1 taking folic acid before pregnancy 2 reduces the risk of autism? 3 A. There are some studies that 4 show that as an association. I don't 5 think it's definitively determined. 6 Q. By the way, folic acid is 7 Vitamin B, right? 8 A. Yes. 9 Q. Okay. There's other 10 prenatal vitamins that are like 11 Vitamin D, right? 12 A. Correct. 13 Q. Vitamin D levels are low in 14 cases of autism, right? 15 A. So there is some association 16 with levels of Vitamin D or higher -- or 17 higher levels of Vitamin D reduce the 18 risk. 19 Q. So you can supplement 20 Vitamin D to reduce the risk of autism? 21 MS. BROWN: Objection to the 22 form. Misstates testimony. 23 THE WITNESS: Yeah. So what 24 you're -- what you're doing is</p>	<p style="text-align: right;">Page 433</p> <p>1 the risk, that's probably a good idea? 2 A. Yeah. 3 Q. Did you say that, under 4 sworn oath, in Galveston this year? 5 MS. BROWN: Hold on. Hold 6 on. Let him answer. 7 THE WITNESS: If I said 8 that, it was a theoretical 9 proposition based on an isolated 10 finding. 11 BY MR. WATTS: 12 Q. Exhibit 512. Page 109, 13 Lines 13 through 15. 14 (Document marked for 15 identification as Exhibit 16 Kolevzon 512.) 17 BY MR. WATTS: 18 Q. February 16th, morning trial 19 session in Galveston. 20 Is that what you said? 21 MS. BROWN: Can you blow up 22 the question too? 23 THE WITNESS: Yeah, these 24 are all ideas that we have that</p>

<p>1 are relevant. But nobody is 2 making that recommendation. 3 BY MR. WATTS: 4 Q. But you told a jury that's 5 probably a good idea, right? 6 MS. BROWN: Objection to 7 form. 8 THE WITNESS: You're taking 9 this out of context, Counselor. 10 BY MR. WATTS: 11 Q. Every time I quote your 12 words back to you, you tell me I'm taking 13 it out of context. 14 MS. BROWN: Well, that's not 15 true, but that happens to be what 16 you're doing here. 17 BY MR. WATTS: 18 Q. I feel so bad. 19 A. I'm not saying that you 20 pick -- that you do every time. I'm 21 saying in this particular situation, they 22 are talking in general about modifiable 23 risk factors. I'm giving Vitamin D as an 24 example, if they were low.</p>	<p>Page 434</p>	<p>1 framework. This is an idea. 2 Q. Oxytocin. 3 A. Yes. 4 Q. That's a natural hormone 5 that stimulates uterine contractions in 6 childbirth and lactation after 7 childbirth, right? 8 A. Correct. Among other -- 9 many other activities. 10 MR. WATTS: Play Exhibit 470 11 for a second. 12 (Document marked for 13 identification as Exhibit 14 Kolevzon 470.) 15 MS. BROWN: Can you -- 16 BY MR. WATTS: 17 Q. This is a video of you on 18 February the 28th of 2018. 19 (Video played.) 20 DR. KOLEVZON: But, in the 21 meantime, because of all the 22 interest in oxytocin, Dr. Buxbaum 23 and his group, including Hala 24 Harony-Nicolas, used oxytocin in</p>
<p>1 Q. What's a modifiable risk -- 2 MS. BROWN: Wait, wait. 3 Lets let him finish. 4 BY MR. WATTS: 5 Q. And I'm sorry, I thought you 6 were done. 7 What's a modifiable risk 8 factor? 9 A. So this is an example. If, 10 in fact, we had established that -- so 11 what we know, to some extent, or at least 12 there have been some associations with 13 higher levels of Vitamin D during 14 pregnancy, lower the risk of autism. 15 Right. 16 That doesn't necessarily 17 mean that taking Vitamin D protects you, 18 but if it did mean that, that would be a 19 modifiable risk factor. We'd say we want 20 to make sure that we have your Vitamin D 21 levels high, because we can modify that 22 through diet and supplements, and that 23 would reduce the risk. 24 This is a conceptual</p>	<p>Page 435</p>	<p>1 another model systems. So instead 2 of using a mouse model, they 3 created a rat model. Rats have 4 bigger brains. They're a little 5 bit easier to work with, 6 evidently. 7 And they looked at some of 8 the electrophysiological measures. 9 So this is a measure of what's 10 called long-term potentiation. 11 It's basically a proxy of synaptic 12 plasticity. And they looked at 13 the effect of oxytocin on these 14 SHANK3 rats, and they found that, 15 actually, oxytocin reversed the 16 electrophysiological deficits. 17 And that's a really important 18 marker of nerve cell conduction 19 integrity, and we saw that there 20 was essentially a reversal of the 21 deficit. And that was a very 22 exciting initial finding. 23 (Video playback ended.) 24 BY MR. WATTS:</p>

<p style="text-align: right;">Page 438</p> <p>1 Q. What is it about oxytocin 2 that achieves a reversal in the deficit? 3 Or do you know? 4 A. So these are rats that are 5 missing a copy of their SHANK3 gene -- 6 actually, I think they're homozygous, so 7 they are missing both copies. And there 8 are -- there's some evidence of some 9 oxytocin dysregulation, essentially, 10 based on cellular studies. 11 And, you know, there's an 12 idea that if you try different compounds 13 in the model systems and they work, then 14 that's an easy target for humans. 15 Q. Okay. 16 A. So they did the study, and 17 we did a study in humans. 18 Q. All right. So -- 19 A. And it failed. 20 Q. -- if we look at 21 Exhibit 405, which is your CV. On 22 Page 4, we were going through your 23 grants, and you had \$265,000 grant to be 24 a co-investigator to study the neural</p>	<p style="text-align: right;">Page 440</p> <p>1 rat touches the light with their 2 nose, and they get a reward. 3 And what happens is you kind 4 of increase the speed of that, 5 which is a measure of their 6 attention. And you also don't 7 have a light at all, which is a 8 measure of their inhibitory 9 control, right. 10 So obviously the kid that -- 11 the kids. The rats with the 12 missing copy or two missing copies 13 of their SHANK3 gene had real 14 deficits in their attention, then 15 you give those rats oxytocin, you 16 rescue those deficits. 17 So now we've identified two 18 critical domains that are 19 consistent with the human 20 phenotype, and we've rescued both 21 of them with oxytocin. 22 So of course, what do you do 23 next? You do a clinical trial 24 with humans.</p>
<p style="text-align: right;">Page 439</p> <p>1 effects to sustained oxytocin treatment 2 on children with autism, right? 3 A. I've had many different 4 grants studying oxytocin. 5 Q. Yeah, including that one? 6 A. Yeah. 7 Q. Okay. Let me play 459, 8 which is a video of you at the Advances 9 in Autism Conference 2017, on 10 November 16th of 2017. 11 (Document marked for 12 identification as Exhibit 13 Kolevzon 459.) 14 (Video played.) 15 DR. KOLEVZON: Many of you 16 have had children who have been 17 assessed for ADHD, and you have a 18 continuous performance test where 19 you are kind of pressing buttons 20 on prompts. That's essentially 21 what this is. 22 So there's a little rat in 23 the chamber. There's these five 24 holes. The holes light up. The</p>	<p style="text-align: right;">Page 441</p> <p>1 (Video playback ended.) 2 BY MR. WATTS: 3 Q. What are the two critical 4 domains that were consistent with the 5 human phenotype? 6 A. In the rats? 7 Q. Mm-hmm. 8 A. In this study, social 9 recognition memory and I think some sort 10 of attention measure. 11 I wasn't listening to 12 myself, but that's what I recall. 13 Q. Probably watching this, 14 saying who is that guy? 15 MS. BROWN: You were 16 distracted by the hair. 17 THE WITNESS: It is 18 nostalgic and sad. 19 BY MR. WATTS: 20 Q. Lets see if we can go back. 21 When you say modifiable risk 22 factors, how many modifiable risk factors 23 have you investigated over the years? 24 A. I can't possibly recall.</p>

<p>1 Q. Okay. Let me ask you the 2 next thing in the book chapter that's got 3 your name on it, in March of 2022. 4 Advanced maternal age. It 5 is true as a matter of data that there's 6 an increased risk for autism spectrum 7 disorder with advancing maternal age, 8 right? 9 A. Yes. 10 Q. I think there's been 11 11 published epidemiological studies 12 before controlling for potential 13 confounders and 7 after you control for 14 the confounders, that have all 15 demonstrated a relationship between 16 advanced maternal age, over the age of 17 35, and an increased risk of autism 18 spectrum disorder; is that right? 19 A. I can't attest to exactly 20 the number of studies. But generally 21 it's accepted that advanced maternal age 22 is a risk factor for autism. 23 Q. Yeah. And for example, in 24 our textbook here -- that's where I got         </p>	<p>Page 442</p> <p>1 important to point out that both of these 2 are occurring through genetic mechanisms. 3 Q. We're going to get to that 4 in a second. 5 After dad's over the age of 6 50, the increased risk of autism spectrum 7 disorder in offspring is more than 8 100 percent after potential confounders 9 are taken into account. Isn't that 10 right? 11 A. Again, I can't attest to the 12 exact odds ratios. But it's commonly 13 accepted that advanced paternal age and 14 advanced maternal age are significant 15 risk factors for autism. 16 Q. Okay. And I'll represent to 17 you everything I just said came out of 18 this book, okay? 19 A. That's the book that I 20 didn't write. 21 Q. But the one that's got your 22 name on it? 23 A. It does, but I can't -- 24 Q. By the way, let me just ask         </p>
<p>1 those, by the way. The 11 studies and 2 7 -- 3 A. Mm-hmm. 4 Q. It says, "Summarizing 5 results across studies suggest that older 6 maternal age of mothers is likely to 7 increase risk of autism spectrum disorder 8 by 50 percent after accounting for 9 potential confounders." 10 Is that consistent with your 11 recollection? 12 A. I think that the odds ratio 13 varies depending on the study. So 14 sometimes it's much higher than that. 15 But that's not inconsistent. 16 Q. And then we go to advanced 17 paternal age, and we see that when dad is 18 over the age of 40, you start to see a 19 statistically significant increase in the 20 risk of the child having autism. And 21 it's more than 50 percent after taking 22 into account potential confounders, 23 right? 24 A. Yeah, and I think it's         </p>	<p>Page 443</p> <p>1 you. Do you really believe in your heart 2 of hearts that if I put a subpoena on you 3 and on Hollander and your co-authors, 4 that there's not going to be e-mails back 5 and forth to you with respect to this 6 book chapter at all? 7 A. Oh, there -- there will be. 8 Q. Okay. 9 A. Yeah. 10 Q. Drafts? 11 A. No drafts. 12 Q. No redlines, nothing like 13 that? 14 A. No. If I had seen 15 acetaminophen in a draft, I would have 16 deleted it. 17 Q. Well, I don't know. You 18 published this before you were asked to 19 look at acetaminophen, didn't -- weren't 20 you? 21 MS. BROWN: I object to the 22 form of the question. 23 THE WITNESS: Again, you're 24 implying that I'm biased.         </p>

<p>1 BY MR. WATTS:</p> <p>2 Q. Well, what I'm implying --</p> <p>3 MS. BROWN: Let him finish.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. What I'm implying is that</p> <p>6 before March of 2022 and every study</p> <p>7 you'd ever done, the word "acetaminophen"</p> <p>8 was never once used.</p> <p>9 A. Right.</p> <p>10 Q. And then the first time that</p> <p>11 your name ends up on a published article,</p> <p>12 it has a section about how acetaminophen</p> <p>13 plays a role in autism spectrum disorder.</p> <p>14 MS. BROWN: That doesn't</p> <p>15 even make sense. I object.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Is there any other</p> <p>18 publication where you talk about</p> <p>19 acetaminophen, consciously or</p> <p>20 unconsciously, before you became a</p> <p>21 lawyer -- I mean before you became an</p> <p>22 expert witness in a litigation?</p> <p>23 MS. BROWN: Object to the</p> <p>24 form.</p>	<p>Page 446</p>	<p>1 MR. WATTS: Well, get ready</p> <p>2 for it at trial.</p> <p>3 THE WITNESS: Right. So I'd</p> <p>4 like to just address that for a</p> <p>5 moment, which is --</p> <p>6 MS. BROWN: Go ahead.</p> <p>7 Because there was a question --</p> <p>8 MR. WATTS: Let's wait on</p> <p>9 that for just a second. Because</p> <p>10 I'm going to ask you about those</p> <p>11 stuff.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Let me just ask you this.</p> <p>14 If you think, down on a</p> <p>15 common-sense level, what is it about the</p> <p>16 advancing age of mom and dad that</p> <p>17 increases the risk of genetic disruption</p> <p>18 in a child?</p> <p>19 A. So as women age, they</p> <p>20 produce a finite number of eggs, and</p> <p>21 those eggs become more susceptible to</p> <p>22 damage.</p> <p>23 Q. And why is that?</p> <p>24 A. Because as we age,</p>	<p>Page 448</p>
<p>1 THE WITNESS: I think what</p> <p>2 you've pointed out is that none of</p> <p>3 the literature that I've ever</p> <p>4 published has the word</p> <p>5 "acetaminophen" in it.</p> <p>6 And my point is that if I</p> <p>7 had gotten a chance to review this</p> <p>8 chapter, I probably wouldn't have</p> <p>9 put acetaminophen in this either,</p> <p>10 regardless of whether I had been</p> <p>11 working on this case or not.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Well, that's not what you</p> <p>14 suggested in Tillery when you were his</p> <p>15 guy.</p> <p>16 A. What did I --</p> <p>17 MS. BROWN: Whoa, whoa,</p> <p>18 whoa.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. I'm happy to consult with</p> <p>21 your Mr. Tillery --</p> <p>22 MS. BROWN: Timeout,</p> <p>23 friends. I object to that</p> <p>24 question as argumentative.</p>	<p>Page 447</p>	<p>1 everything becomes more susceptible to</p> <p>2 damage.</p> <p>3 Q. Just look at me.</p> <p>4 A. Exactly.</p> <p>5 Q. Okay.</p> <p>6 A. Strike that "exactly" part.</p> <p>7 MS. BROWN: No, don't strike</p> <p>8 it.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Let me ask you this --</p> <p>11 A. Hold on, let me finish.</p> <p>12 Q. Yeah, go ahead.</p> <p>13 A. In the dads, it's a little</p> <p>14 bit of a different mechanism, where dads</p> <p>15 are always making new sperm. But the</p> <p>16 mechanism to reproduce sperm becomes</p> <p>17 faulty, again, with age. Like as your</p> <p>18 cars age, the engine starts to break</p> <p>19 down.</p> <p>20 Q. Okay.</p> <p>21 A. And so those are examples of</p> <p>22 heritable genetic factors, essentially</p> <p>23 passed on from parent to child, but the</p> <p>24 parent isn't affected, so it's not,</p>	<p>Page 449</p>

<p style="text-align: right;">Page 450</p> <p>1 strictly speaking, inherited, but it's 2 still embedded within the genetics. 3 Q. Have you ever heard the 4 phrase "pack-years" in dealing with 5 epidemiology with smoking? 6 A. Pack-years? 7 Q. Yeah. 8 A. No. 9 Q. I mean, I think the concept 10 is -- 11 A. Oh, yes, no. I have, I 12 have. 13 Q. -- if you smoke for a little 14 bit, it's not enough to -- 15 A. Yeah, five years, five 16 cigarettes is -- yeah, 25-year pack -- 17 Q. Yeah. So with respect to 18 environmental exposures, the longer one 19 is exposed the greater their exposure 20 will be, all other things being equal? 21 MS. BROWN: Object to the 22 form. Lacks foundation. 23 THE WITNESS: It depends. 24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 452</p> <p>1 paternal age and preterm birth, yes. 2 Q. I'm just reading from 3 Chapter 11 of your book chapter in the 4 second Textbook of Autism Spectrum 5 Disorder. 6 So is it true or not? Is 7 this another one where Kapra wrote 8 something you wouldn't have signed off on 9 if you'd wrote the chapter with your name 10 on it? 11 MS. BROWN: Objection to the 12 form. 13 THE WITNESS: So, again, I 14 think that there's a correlation 15 there. So it is a reasonable 16 thing to say. 17 This is an example where 18 there is actually a mechanism, 19 right. 20 BY MR. WATTS: 21 Q. Okay. Low birth weight or 22 fetal malnutrition is a major contributor 23 of intellectual disability, which is 24 commonly associated with autism spectrum</p>
<p style="text-align: right;">Page 451</p> <p>1 Q. Sorry? 2 A. It depends. 3 Q. Okay. If somebody is 4 50 years old and is subjected to a 5 steady-state exposure of a chemical, they 6 are going to have greater exposure at 50 7 than they would at 40, all other things 8 being equal, right? 9 MS. BROWN: Object. Lacks 10 foundation. 11 THE WITNESS: Depends. 12 BY MR. WATTS: 13 Q. Okay. When asked to explain 14 paternal and maternal age effects, the 15 older you get, there is an increased 16 occurrence of spontaneous genomic 17 alterations, right? 18 A. That's the idea, yes. 19 Q. In addition to that, the 20 older parents are, the higher number of 21 premature and low-birth-weight babies 22 surviving this, right? 23 A. I do think that there is a 24 correlation between older maternal and</p>	<p style="text-align: right;">Page 453</p> <p>1 disorder, right? 2 A. So I am not prepared to 3 testify about all the different causes of 4 intellectual disability. 5 Q. Were you prepared to testify 6 it in your report in the Daniels-Feasel 7 case, Page 21 of 94, on November 8, 2018? 8 A. I may or may not have been. 9 But as I'm sitting here today, I haven't 10 investigated this. 11 Q. Well, let's see where you -- 12 let's see where you are in November of 13 2018. 14 MR. WATTS: Page 21 of 94 of 15 Exhibit 479. 16 BY MR. WATTS: 17 Q. Environmental factors -- 18 MR. WATTS: Page 21 -- I'm 19 sorry. Oh, you know what, 21 of 20 94. Sorry. You're right. Go 21 back up. 22 Paragraph 7-A. 23 I think you're on the wrong 24 page, Bud. There we go.</p>

<p>1 BY MR. WATTS:</p> <p>2 Q. In your expert report in the</p> <p>3 Daniels-Feasel case, did you write that,</p> <p>4 "Environmental factors (e.g., maternal</p> <p>5 alcohol abuse during gestation,</p> <p>6 infections, birth complications, and</p> <p>7 malnutrition) are major contributors of</p> <p>8 intellectual disability which is commonly</p> <p>9 associated with autism spectrum</p> <p>10 disorder"?</p> <p>11 A. I did write that, yes.</p> <p>12 Q. And after you wrote that in</p> <p>13 2018, you were aware of studies showing</p> <p>14 that the estimated prevalence for autism</p> <p>15 spectrum disorder diagnosis was about</p> <p>16 five times greater if the baby was of low</p> <p>17 birth weight, right?</p> <p>18 MS. BROWN: Objection.</p> <p>19 Lacks foundation.</p> <p>20 THE WITNESS: Can you repeat</p> <p>21 that?</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 532.)</p>	<p>Page 454</p> <p>1 MR. WATTS: Pull out the</p> <p>2 conclusions.</p> <p>3 MS. BROWN: Well, let's just</p> <p>4 give him a minute to read the</p> <p>5 article.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Hold up.</p> <p>8 Have you seen this before?</p> <p>9 A. This is familiar, but I</p> <p>10 don't remember the details of it.</p> <p>11 Q. Okay. We'll go to the</p> <p>12 conclusions on 16 to 20. It says, "The</p> <p>13 estimated prevalence of ASD diagnoses in</p> <p>14 this LBW cohort", I assume that's low</p> <p>15 birth weight cohort?</p> <p>16 A. Yes.</p> <p>17 Q. -- "was five times the</p> <p>18 prevalence reported by the Centers of</p> <p>19 Disease Control and Prevention for</p> <p>20 eight-year-olds in the general U.S.</p> <p>21 population in 2006. The prospective</p> <p>22 study, using rigorous diagnostic</p> <p>23 procedures, confirms that the rate of ASD</p> <p>24 is elevated among low birth</p>
<p>1 BY MR. WATTS:</p> <p>2 Q. Sure.</p> <p>3 Let me show you Exhibit 532,</p> <p>4 which is a study by Pinto-Martin.</p> <p>5 Did you read Dr. Powell's</p> <p>6 deposition?</p> <p>7 A. Bits and pieces of it.</p> <p>8 Q. Did you hear the classic</p> <p>9 part where he called Pinto-Martin,</p> <p>10 Mr. Pinto-Martin?</p> <p>11 A. I did.</p> <p>12 Q. And Baccarelli,</p> <p>13 Mrs. Baccarelli?</p> <p>14 A. I did.</p> <p>15 Q. Okay. Well, assuming it's</p> <p>16 Mrs. Jennifer Pinto-Martin, she is the</p> <p>17 first author of "Prevalence of Autism</p> <p>18 Spectrum Disorder in Adolescents Born</p> <p>19 Weighing Less Than 2,000 Grams,"</p> <p>20 published November 2011 in Pediatrics.</p> <p>21 If we go to Page 16 of 20 --</p> <p>22 A. Hold on. Let me just read</p> <p>23 it.</p> <p>24 Q. Okay.</p>	<p>Page 455</p> <p>1 weight/preterm survivors."</p> <p>2 Did I read that right?</p> <p>3 A. I think extreme low birth</p> <p>4 weight is a clear risk factor for autism.</p> <p>5 And I think that --</p> <p>6 Q. Why?</p> <p>7 A. Why is it higher than the</p> <p>8 CDC?</p> <p>9 Q. Why is it a risk factor for</p> <p>10 autism?</p> <p>11 A. It's just been shown in</p> <p>12 studies -- I don't know exactly what the</p> <p>13 mechanism is.</p> <p>14 Q. Okay. So you don't know why</p> <p>15 it's true, you just know that,</p> <p>16 statistically, it is true?</p> <p>17 A. It's one of the commonly</p> <p>18 accepted risk factors in the scientific</p> <p>19 community. I don't think it's a causal</p> <p>20 factor.</p> <p>21 It could be acting by virtue</p> <p>22 of preterm birth. It could be acting by</p> <p>23 genetic susceptibility.</p> <p>24 But the reason why it's</p>

1 different than the CDC studies is because  
 2 the CDC studies include lots of kids who  
 3 don't have autism.

4       But I'm speculating.

5       Q. So in the book chapter from  
 6 last year, Exhibit 494, with your name on  
 7 it, it says, "Low birth weight defined as  
 8 birth weight below 2500 grams, 5 pounds  
 9 8 ounces, is considered to be a marker  
 10 for newborns at high risk for later  
 11 neurological, psychiatric, and  
 12 neuropsychological problems."

13       Do you agree with that?  
 14       A. Broadly speaking, that's  
 15 true.

16       Q. Okay. Preterm birth. In  
 17 the same book chapter you all cite  
 18 Persson 2020.

19       Says, "Finding the relative  
 20 risk of autism spectrum disorder  
 21 increased weekly as the date of delivery  
 22 diverged from 40 weeks."

23       Do you know why that would  
 24 be true?

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1       Q. And I should say the  
 2 Katz/Kolevzon paper, right? You were a  
 3 co-author?

4       A. I was. I think we looked at  
 5 this one already. Hold on.

6       Q. By the way, did Ms. Katz  
 7 tell you that she was going to put your  
 8 name on this book chapter -- I mean, this  
 9 paper?

10       A. Is that a serious question?

11       Q. Probably halfway so.

12       By the way, you brought up a  
 13 good point. You are the last author.  
 14 Tell me the relationship between the last  
 15 author and the first, and the people in  
 16 the middle.

17       A. So --

18       Q. Just generally, I mean, I  
 19 understand there's variations.

20       A. Yeah. Generally speaking,  
 21 the first author is the person who wrote  
 22 it, or maybe the second author is the  
 23 person who wrote it. The last author  
 24 tends to be the senior author.

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1       A. I'd have to look at this  
 2 reference to better understand it.

3       Q. Anything off the top of your  
 4 head just make sense as to why ASD would  
 5 go higher the farther you are away from  
 6 40 weeks?

7       MS. BROWN: Objection to the  
 8 form.

9       THE WITNESS: I'm not sure I  
 10 understand the question.

11 BY MR. WATTS:

12       Q. Okay. In your paper with  
 13 Viktorin. Environmental factors that are  
 14 implicated as affecting fetal  
 15 development, such as uncontrolled  
 16 diabetes, results in an increased risk,  
 17 right?

18       A. Again, we'd have to pull the  
 19 paper. Shall we have that exhibit again?

20       You're quoting the Viktorin  
 21 paper?

22       Q. Let's use the Katz paper for  
 23 this one. Exhibit 491. Page 7, please.

24 BY MR. WATTS:

1       MS. BROWN: Here it is.

2 BY MR. WATTS:

3       Q. What does that mean to be  
 4 the senior author?

5       A. Senior author is the person  
 6 who kind of organizes the effort, mentors  
 7 the person who writes the first --  
 8 usually the first or second author.

9       Q. The older you get, the more  
 10 hair that you lose, you kind of get --  
 11 get to the back as a senior author in  
 12 the -- how does that work?

13       A. So, I mean, Avi and I are  
 14 both equally senior.

15       Q. Yeah.

16       A. It happens to be that Julia  
 17 was a resident of mine, and so I kind of  
 18 assumed responsibility for the whole  
 19 effort. And Avi was more of a guiding  
 20 consultant.

21       Q. Okay. Is the first author  
 22 usually junior to the last author?

23       A. No. I think it depends on  
 24 the type of study. I put myself as first

1 authors on very -- you know, studies that  
 2 I think are really important, that I want  
 3 to make sure that I'm the first author  
 4 on.

5 Q. All right. Okay. And tell  
 6 me what you said about the second author,  
 7 usually writing it, or something?

8 A. Well, so sometimes there's a  
 9 first author who sort of acts as lead,  
 10 but the second author does the most --  
 11 most of the writing.

12 Q. Okay. Okay.

13 A. In the case of my  
 14 Chapter 11, I was asked, just to clarify,  
 15 whether I wanted to be on the chapter.  
 16 So it wasn't that Raz put me on the  
 17 chapter without asking me. He did ask  
 18 me.

19 Q. Okay.

20 A. It's just that I was unaware  
 21 of the contents of the chapter, and I  
 22 neglected, as an oversight, to read it  
 23 carefully.

24 Q. Okay. Fair enough.

1 So to get back to my point.  
 2 And I think you've just obviated the need  
 3 for it. If I were to subpoena all the  
 4 e-mails, you would have been copied on  
 5 this stuff, but it was an oversight by  
 6 you, not having seen it. You didn't look  
 7 at it close enough, is what you're  
 8 saying.

9 Is that fair?

10 MS. BROWN: Objection to  
 11 form.

12 BY MR. WATTS:

13 Q. Go ahead.

14 A. So now I'm speculating based  
 15 on memory. But I suspect that there  
 16 would have been an e-mail saying, hey, do  
 17 you want to be on this chapter, we're  
 18 updating the first textbook chapter. And  
 19 I just said -- probably said sure. And  
 20 then that was probably it. Or maybe, oh,  
 21 we submitted it, is that cool. And I was  
 22 like, oh, yeah, that's great. Figuring  
 23 that I trust Avi and I trust Raz, and we  
 24 were updating an existing chapter, and

1 they were putting me on as a courtesy.  
 2 So I said thank you very much.  
 3 Q. Okay. Avi being  
 4 Reichenberg?

5 A. Yes.

6 Q. I'm told that he's in poor  
 7 health right now; is that true?

8 A. Avi is doing well.

9 Q. Good. Okay. I'll leave it  
 10 there. I'm not trying to dig in.

11 A. Yeah.

12 Q. I heard that earlier this  
 13 week, and it kind of bummed me out.

14 A. You know Avi.

15 Q. I know of his work. I don't  
 16 know him personally.

17 Okay. Let's keep going.

18 The Katz paper, 491, we  
 19 talked about the pregestational diabetes.  
 20 You see the overall increased risk varied  
 21 from 1.39 to 1.65.

22 Do you see that?

23 A. Yeah, I do. But, again,  
 24 this is important not to take out of

1 context. Because I think the question of  
 2 consistency and strength of association  
 3 is especially important in this review.

4 Q. Yeah. And in the review  
 5 that was done in the book chapter, it  
 6 talks about diabetes as a risk factor,  
 7 right?

8 A. I'm sure there's some of  
 9 that out there. Although this paper  
 10 likely reflects a more updated review of  
 11 the literature than that chapter.

12 Q. Okay. High maternal BMI.  
 13 BMI is associated with a higher risk of  
 14 autism spectrum disorder, right?

15 A. So, again, there are  
 16 probably some isolated studies that show  
 17 that. But they may not be consistent  
 18 enough. So I need to look at this paper  
 19 more carefully and then we can talk about  
 20 the results.

21 Q. Well, in the Katz paper on  
 22 Page 7, is part of what you all say, "BMI  
 23 was associated with a higher risk of ASD  
 24 irrespective of other insulin-resistant

<p>1 conditions."</p> <p>2 It's on the screen if you</p> <p>3 want to see where it is.</p> <p>4 A. So I think the findings from</p> <p>5 this paper reflect that the only</p> <p>6 significant associated factor among the</p> <p>7 ones that we examined were preeclampsia,</p> <p>8 and other ones showed some association</p> <p>9 but probably were not consistent enough</p> <p>10 or didn't show strength of association</p> <p>11 and that we thought were just sort of</p> <p>12 warranting further study.</p> <p>13 Q. Okay. Can high maternal BMI</p> <p>14 lead to inflammation?</p> <p>15 MS. BROWN: Objection to the</p> <p>16 form. Overbroad.</p> <p>17 THE WITNESS: So that's very</p> <p>18 broad.</p> <p>19 What do you mean by</p> <p>20 inflammation?</p> <p>21 BY MR. WATTS:</p> <p>22 Q. What do you mean by</p> <p>23 inflammation?</p> <p>24 A. You're asking me about</p>	Page 466	<p>1 Q. Between preeclampsia and</p> <p>2 inflammation during fetal development?</p> <p>3 A. No. Between preeclampsia</p> <p>4 and autism.</p> <p>5 Q. Okay.</p> <p>6 A. So as a risk factor for</p> <p>7 autism.</p> <p>8 Q. Okay. But let me get back</p> <p>9 to my question if that's fine. I hope</p> <p>10 you've found it.</p> <p>11 But does preeclampsia have a</p> <p>12 role in causing inflammation during fetal</p> <p>13 development?</p> <p>14 MS. BROWN: Objection to the</p> <p>15 form.</p> <p>16 THE WITNESS:</p> <p>17 Hypothetically.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Okay. Is it hypothetically</p> <p>20 in a way that you've written that?</p> <p>21 A. Let's go and see what I've</p> <p>22 written and decide.</p> <p>23 Q. Let's go on to maternal</p> <p>24 infection first so I can stay on my word</p>	Page 468
<p>1 inflammation?</p> <p>2 Q. Yeah.</p> <p>3 A. Inflammation, where, in the</p> <p>4 brain?</p> <p>5 Q. Well, I'm just asking</p> <p>6 generally, first of all, and then we'll</p> <p>7 get to what you've said about</p> <p>8 inflammation.</p> <p>9 A. Yeah.</p> <p>10 Q. Can high maternal BMI lead</p> <p>11 to inflammation during fetal development?</p> <p>12 A. I don't know. Maybe.</p> <p>13 Q. Okay. What about excessive</p> <p>14 gestational weight gain?</p> <p>15 A. There have been some</p> <p>16 associations. I don't know that it's</p> <p>17 commonly accepted as a risk factor for</p> <p>18 autism.</p> <p>19 Q. Does preeclampsia -- that's</p> <p>20 high blood pressure, right?</p> <p>21 A. Preeclampsia is high blood</p> <p>22 pressure during pregnancy. And I think,</p> <p>23 yes, there have been more studies and</p> <p>24 more sort of stronger associations there.</p>	Page 467	<p>1 and then we'll get to preeclampsia.</p> <p>2 A. Okay.</p> <p>3 Q. Maternal infection. Does</p> <p>4 infection lead to inflammation?</p> <p>5 A. So it depends.</p> <p>6 Q. On what?</p> <p>7 A. On the nature of the</p> <p>8 infection. The location of the</p> <p>9 infection.</p> <p>10 Q. Okay. What is it about</p> <p>11 infectious agents and prenatal infections</p> <p>12 that causes an increase in the risk of</p> <p>13 autism spectrum disorder?</p> <p>14 MS. BROWN: Objection to the</p> <p>15 form.</p> <p>16 THE WITNESS: So there's</p> <p>17 many different possibilities. I</p> <p>18 don't think any have been</p> <p>19 established.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Well, let me look at</p> <p>22 Page 191 of the book chapter. And this</p> <p>23 is under Viral and Bacterial Infections.</p> <p>24 MR. WATTS: 494, please.</p>	Page 469

<p>1 Page 191.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. It says, "A recent</p> <p>4 meta-analysis demonstrated a</p> <p>5 statistically significant association of</p> <p>6 maternal infection/fever with ASD in</p> <p>7 offspring, odds ratio 1.32,</p> <p>8 95th percentile, CI 1.20 to 1.46. Citing</p> <p>9 Tioleco at 2021.</p> <p>10 "Although causality has not</p> <p>11 been firmly established, these findings</p> <p>12 suggest maternal infection during</p> <p>13 pregnancy confers an increased risk for</p> <p>14 autism spectrum disorder in offspring."</p> <p>15 And my question is, what is</p> <p>16 it about maternal infection that, as a</p> <p>17 clinician, makes sense to you as causing</p> <p>18 increased risk of autism spectrum</p> <p>19 disorder?</p> <p>20 MS. BROWN: Objection to the</p> <p>21 form of the question.</p> <p>22 THE WITNESS: I think I</p> <p>23 answered this in saying that there</p> <p>24 are probably many different</p>	<p>Page 470</p>	<p>1 Page 157, Lines 3 through 6.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. That's something you</p> <p>4 testified to on August 4th of 2020; is</p> <p>5 that right?</p> <p>6 A. That's correct.</p> <p>7 Q. Okay. Now, is preeclampsia</p> <p>8 a serious blood pressure condition?</p> <p>9 A. I'm not sure I would be</p> <p>10 qualified to gauge whether it's serious</p> <p>11 or not. But preeclampsia is definitely a</p> <p>12 blood pressure condition.</p> <p>13 Q. In Exhibit 491, Page 9, you</p> <p>14 and Ms. Katz write in your article that,</p> <p>15 "Preeclampsia contributes to an increase</p> <p>16 in the circulation of proinflammatory</p> <p>17 cytokines, such as the IL-6 and CRP,</p> <p>18 which can impact the development of</p> <p>19 neurotransmitter pathways in the</p> <p>20 developing fetus."</p> <p>21 True?</p> <p>22 A. So this is certainly a</p> <p>23 compelling hypothetical mechanism.</p> <p>24 Q. Okay. And it's compelling</p>	<p>Page 472</p>
<p>1 hypothetical reasons why maternal</p> <p>2 infection might increase the risk.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Have you studied why?</p> <p>5 A. I have not studied why.</p> <p>6 Q. Okay. You just know that it</p> <p>7 increases the risk?</p> <p>8 A. I know that there are some</p> <p>9 studies that show an association.</p> <p>10 Q. Okay. Congenital rubella</p> <p>11 syndrome. That results with -- from a</p> <p>12 maternal infection with rubella during</p> <p>13 pregnancy, right?</p> <p>14 A. Yes.</p> <p>15 Q. It's pretty well accepted to</p> <p>16 cause autism in the offspring, right?</p> <p>17 A. So based on very small</p> <p>18 studies, that has been reproduced in the</p> <p>19 literature, that people consider</p> <p>20 congenital rubella to cause autism.</p> <p>21 Q. Let me show you your</p> <p>22 testimony in the Purdie versus Mercy</p> <p>23 Medical case.</p> <p>24 MR. WATTS: Exhibit 486,</p>	<p>Page 471</p>	<p>1 because you and Ms. Katz wrote that</p> <p>2 general -- or, "Gestational hypertension</p> <p>3 and preeclampsia are consistently found</p> <p>4 to be associated with an increased risk</p> <p>5 of autism spectrum disorder in</p> <p>6 offspring," right?</p> <p>7 A. So I think the results of</p> <p>8 Dr. Katz's review suggest that, among the</p> <p>9 various factors that she looked at,</p> <p>10 preeclampsia came up more consistently</p> <p>11 and stronger than most of the others.</p> <p>12 Q. And if we go to Page 9, "The</p> <p>13 most consistent association across</p> <p>14 studies was observed for preeclampsia and</p> <p>15 autism spectrum disorder. This is</p> <p>16 further supported by a sibling analysis</p> <p>17 suggesting limiting" -- "limited familial</p> <p>18 confounding factors," right?</p> <p>19 A. That's what Dr. Katz has</p> <p>20 written, yes.</p> <p>21 Q. And on Page 10, you all</p> <p>22 concluded, "Current evidence from</p> <p>23 large-scale, population-based</p> <p>24 epidemiological studies support an</p>	<p>Page 473</p>

<p>1 association between preeclampsia and 2 autism spectrum disorder," right? 3 A. So there is an association 4 that's -- 5 Q. Is that an environmental 6 cause of autism? 7 A. So you're sort of moving 8 quickly to this idea of cause. 9 Q. Is it an environmental 10 association? 11 MS. BROWN: Well, let him -- 12 let him finish. 13 THE WITNESS: So I said 14 association. You said cause. 15 BY MR. WATTS: 16 Q. I'll take association. 17 Is it a environmentally 18 induced association between preeclampsia 19 and autism spectrum disorder? 20 MS. BROWN: Objection to the 21 form. 22 THE WITNESS: So it's a 23 intrauterine environment. I would 24 think that's true, yes.</p>	<p>Page 474</p> <p>1 sense to you as playing a role? 2 A. I don't think a role has 3 been established. And I don't think that 4 we know what the mechanism is. 5 Q. Is it mechanism of action? 6 What are you comfortable saying about it? 7 MS. BROWN: Objection to the 8 form of the question. Calls for 9 speculation. 10 THE WITNESS: What am I 11 comfortable saying about what 12 exactly? 13 BY MR. WATTS: 14 Q. Well, I asked you why 15 maternal smoking increases the risk of 16 ASD. You said oxygen deprivation in the 17 tissues. 18 MS. BROWN: I object -- 19 object to that. 20 BY MR. WATTS: 21 Q. And I'm asking what is it 22 about oxygen deprivation that makes sense 23 to you, as a clinician, could play a role 24 in ASD?</p>
<p>1 BY MR. WATTS: 2 Q. Okay. What is it about 3 maternal smoking that leads to an 4 increased risk of autism spectrum 5 disorder? 6 MS. BROWN: Objection to the 7 form. Lacks foundation. 8 THE WITNESS: So I think 9 there's probably many different 10 factors that one could theorize. 11 BY MR. WATTS: 12 Q. Go ahead. 13 A. So oxygen deprivation, for 14 one. 15 Q. What does oxygen deprivation 16 mean? 17 A. It means the tissues in the 18 body are not receiving enough oxygen. 19 Q. And why would that lead to 20 autism spectrum disorder? 21 A. I didn't say it would lead 22 to autism spectrum disorder. 23 Q. What is it about oxygen 24 deprivation in the tissues that makes</p>	<p>Page 475</p> <p>1 A. Yeah, so -- 2 MS. BROWN: Objection. 3 Lacks foundation. 4 Go ahead. 5 THE WITNESS: So -- yeah, I 6 think you're mischaracterizing 7 what I said. 8 What I said is there are 9 probably many different potential 10 reasons, hypothetically, why 11 smoking could be associated with 12 autism. And none of those 13 scenarios would somebody say that 14 smoking causes autism. 15 But among them, if I'm 16 speculating, oxygen deprivation 17 is, you know, probably not very 18 good for brain tissue and so can 19 lead to global problems, 20 hypoxia-related problems, that 21 theoretically, hypothetically, 22 could be related to an increased 23 risk of autism. 24 BY MR. WATTS:</p>

<p>1 Q. You mentioned hypoxia. What 2 does that mean? 3 A. Just low oxygen. 4 Q. Okay. In the same way 5 oxygen deprivation, you said, could play 6 a role, hypoxia could play a role? 7 MS. BROWN: Objection. 8 Calls for speculation. 9 THE WITNESS: I'm sort of -- 10 I'm using those things kind of 11 synonymously. 12 BY MR. WATTS: 13 Q. Kind of as an analogy? 14 A. No. As synonyms. 15 Q. Okay. What other things can 16 cause oxygen deprivation? 17 A. I don't want to speculate. 18 MS. BROWN: Objection. 19 Calls for speculation. 20 BY MR. WATTS: 21 Q. How does oxygen deprivation 22 differ from oxidative stress? 23 MS. BROWN: Objection. 24 Lacks foundation.</p>	<p>Page 478 1 means, was my question? 2 A. Well, so oxidative stress is 3 a relatively nonspecific term that 4 relates to reactive oxygen, sort of 5 radicals that are circulating in the 6 system and potentially causing damage to 7 cells. 8 Q. What way are they theorized 9 to cause damage to cells? 10 A. There's many, many 11 mechanisms, as I understand it. 12 Q. Give me the mechanisms that 13 you understand. 14 A. I don't understand them, 15 necessarily, because I'm not an expert in 16 this area. 17 Q. Okay. Can I take the last 18 two minutes to say you're not going to 19 testify about oxidative stress one way or 20 the other? 21 A. So I'm comfortable 22 testifying that, based on the scientific 23 literature, my knowledge as an expert in 24 autism, that it's not commonly accepted</p>
<p>1 THE WITNESS: So they are 2 different concepts. 3 BY MR. WATTS: 4 Q. What is oxidative stress? 5 A. So it's lots of different 6 things. I'm definitely not an expert in 7 oxidative stress. I'm not sure I'm 8 comfortable with providing testimony 9 about that. 10 Q. What is your understanding 11 of what oxidative stress means? 12 MS. BROWN: Objection. 13 Calls for speculation. 14 THE WITNESS: Well, as it 15 relates to autism spectrum 16 disorder, my understanding is that 17 there's no consensus in the 18 scientific community that 19 oxidative stress causes autism. 20 BY MR. WATTS: 21 Q. And I'm not sure that 22 answered my question, respectfully. 23 What -- what is your 24 understanding of what oxidative stress</p>	<p>Page 479 1 that oxidative stress causes autism. 2 But, no, I'm not going to 3 testify about the mechanisms of oxidative 4 stress. 5 Q. Have you written about 6 oxidative stress as it relates to autism? 7 A. I don't think I've studied 8 that, certainly not on a cellular level. 9 Q. Do you agree that oxidative 10 stress may have lasting consequences for 11 offspring health and development? 12 MS. BROWN: Objection to the 13 form. Lacks foundation. Broad. 14 THE WITNESS: I think that's 15 a broad statement. If you showed 16 me the context, I could sort of 17 agree or disagree. 18 BY MR. WATTS: 19 Q. Sure. 20 Page 190 of your book 21 chapter published in March of last year. 22 Exhibit 494, Page 190. 23 MS. BROWN: Can he have your 24 book? Our hardcopy doesn't go</p>

<p>1 past the cover page.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Do you see the second line</p> <p>4 under "Gestational Diabetes"?</p> <p>5 Do you agree with that</p> <p>6 statement, "Oxidative stress due to</p> <p>7 gestational diabetes may have lasting</p> <p>8 consequences for offspring health and</p> <p>9 development"?</p> <p>10 A. Yeah, I think that's a</p> <p>11 nonspecific and very vague statement</p> <p>12 that's kind of hard to say I don't agree</p> <p>13 with. Because, sure, it's possible, but</p> <p>14 under certain circumstances.</p> <p>15 Q. Okay. Maternal alcohol use</p> <p>16 is associated with a higher risk of</p> <p>17 autism spectrum disorder?</p> <p>18 A. I don't think that's been</p> <p>19 well established.</p> <p>20 Q. Is maternal alcohol use a</p> <p>21 major contributor of intellectual</p> <p>22 disability which is commonly associated</p> <p>23 with autism spectrum disorder?</p>	Page 482	<p>1 Page 192, the book chapter marked as</p> <p>2 Exhibit 494.</p> <p>3 Down at the bottom it says,</p> <p>4 "A recent review of 20 articles published</p> <p>5 in England from 1977 to 2020 found a</p> <p>6 strong association between maternal</p> <p>7 exposure to particulate matter, mostly</p> <p>8 during pregnancy, and the risk of autism</p> <p>9 spectrum disorder."</p> <p>10 Is that part of what's</p> <p>11 written in the book chapter that has your</p> <p>12 name on it as a co-author?</p> <p>13 A. Yeah, it's written. But I</p> <p>14 have no way to evaluate the accuracy of</p> <p>15 that statement.</p> <p>16 Q. Okay. Let's talk about</p> <p>17 metals for a second. Page 191 and 192.</p> <p>18 Now, my friends at Arnold &amp;</p> <p>19 Itkin showed me the CV that you produced</p> <p>20 in that case three months after this was</p> <p>21 published. It didn't have this book</p> <p>22 chapter on it there either. Are you</p> <p>23 aware of that?</p>	Page 484
<p>24 MS. BROWN: Objection to the</p>	Page 483	<p>24 MS. BROWN: Objection to the</p>	Page 485
<p>1 form of the question.</p>	Page 483	<p>1 form. Lacks foundation.</p>	Page 485
<p>2 THE WITNESS: Maternal</p> <p>3 alcohol abuse causes fetal alcohol</p> <p>4 syndrome which causes intellectual</p> <p>5 disability.</p>		<p>2 THE WITNESS: So I think</p> <p>3 I've been very clear. I was</p> <p>4 unaware of this chapter entirely,</p> <p>5 which is why it didn't appear on</p> <p>6 my CV. So there was no</p> <p>7 selectivity around including it or</p> <p>8 not including it. It never</p> <p>9 appeared on my CV until defense</p> <p>10 attorneys pointed it out to me.</p>	
<p>6 BY MR. WATTS:</p>		<p>11 BY MR. WATTS:</p>	
<p>7 Q. What is fetal alcohol</p> <p>8 syndrome?</p>		<p>12 Q. Yeah, a month ago.</p>	
<p>9 A. It's the effects on a fetus</p> <p>10 when the mother drinks alcohol.</p>		<p>13 A. Three weeks?</p>	
<p>11 Q. And what is the effect on</p> <p>12 the fetus when a mother drinks alcohol?</p>		<p>14 Q. Have you revised your CV to</p>	
<p>13 A. I don't know the details.</p>		<p>15 add it?</p>	
<p>14 I'm not a fetal alcohol syndrome expert.</p>		<p>16 A. I haven't yet, but I will</p>	
<p>15 Q. You don't know why fetal</p> <p>16 alcohol syndrome has an effect on a</p>		<p>17 for sure.</p>	
<p>17 fetus?</p>		<p>18 Q. This is the last time you</p>	
<p>18 MS. BROWN: Objection to the</p> <p>19 form. Asked and answered.</p>		<p>19 want to be crossed about this missing</p>	
<p>20 THE WITNESS: I'd have to be</p> <p>21 speculating, and I don't want to</p> <p>22 do that.</p>		<p>20 chapter?</p>	
<p>23 BY MR. WATTS:</p>		<p>21 MS. BROWN: Objection to the</p>	
<p>24 Q. Okay. Air pollution. Go to</p>		<p>22 form.</p>	
<p>23 THE WITNESS: No. Honestly,</p>		<p>23 I think it's -- to pull out</p>	

<p>1 sentences from a chapter I didn't  2 write in a non-peer-reviewed  3 journal, when you talk about  4 reasonableness, this is not  5 reasonable.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Well, it's a -- it's a book,  8 right?</p> <p>9 A. It's a chapter that's  10 outdated by the time it's published, that  11 very few people in the scientific  12 community actually read.</p> <p>13 Q. Are you going to participate  14 in a third edition of Autism Spectrum  15 Disorders to clarify things?</p> <p>16 A. That's a very good question.  17 I think if I have the opportunity to  18 revise this chapter, I will.</p> <p>19 Q. Okay. In the three weeks  20 since these defense lawyers pointed out  21 that this book chapter with your name on  22 it was published in March of 2022, have  23 you had any discussion with Mr. Hollander  24 about doing a third edition so you can</p>	Page 486	<p>1 If we could pull out  2 Exhibit 556. I want to talk to you about  3 a May 2010 publication from a college  4 known as Harvard.</p> <p>5 (Document marked for  6 identification as Exhibit  7 Kolevzon 556.)</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Did you apply to go to  10 Harvard?</p> <p>11 A. Sorry?</p> <p>12 Q. Huh?</p> <p>13 A. Sorry, say that again.</p> <p>14 Q. Did you apply to go to  15 Harvard?</p> <p>16 A. I don't think I was  17 qualified to apply to go to Harvard.</p> <p>18 Q. I laughed at one of your  19 prior depositions that you said you went  20 to school in Israel, because I didn't get  21 into school here, or something like that.  22 I can't remember.</p> <p>23 Where did you apply that you  24 didn't get into such that you went to</p>	Page 488
<p>1 clarify your position?</p> <p>2 A. I have not spoken to  3 Dr. Hollander about clarifying my  4 position.</p> <p>5 Q. Okay. If we look at  6 Page 192, part of what's written in this  7 book chapter about metals is, "These  8 findings suggest that metal toxicant  9 uptake and essential element deficiency  10 during specific developmental windows  11 increases autism spectrum disease risk  12 and severity, supporting the hypothesis  13 of systemic elemental dysregulation in  14 autism spectrum disorder."</p> <p>15 Is that what it says?</p> <p>16 A. I think Manish has a lot of  17 interesting hypotheses around the roles  18 of heavy metals. And that's what he's  19 written, or that's what's being  20 referenced here, yes.</p> <p>21 Q. Okay. If we could, let's go  22 to the concept of medications as an  23 environmental risk for autism spectrum  24 disorder.</p>	Page 487	<p>1 Israel?</p> <p>2 A. I only applied in New York,  3 so Mount Sinai, and Cornell, I was  4 waitlisted, and it didn't work out.</p> <p>5 Q. Okay. By the way, where did  6 you go to college in Israel?</p> <p>7 A. No, I didn't. I went to --  8 I went to college in the University of  9 Wisconsin.</p> <p>10 Q. You said you went to Israel  11 because you didn't get in somewhere.  12 What did you do in Israel?</p> <p>13 A. Right. So I went to college  14 in the University of Wisconsin. And then  15 I didn't do very well in my first couple  16 years. So I created some obstacles to  17 get into medical school. And then I was  18 waitlisted in medical schools in  19 New York. So I went to Israel for  20 medical school. Tel Aviv University.</p> <p>21 Q. Okay. Were you overexposed  22 to environmental toxicants in your first  23 couple years in college?</p> <p>24 A. That is an excellent</p>	Page 489

<p>1 question, Counselor.</p> <p>2 MS. BROWN: Objection to the</p> <p>3 form of the question.</p> <p>4 THE WITNESS: Isn't there --</p> <p>5 isn't there something where you</p> <p>6 plead the Fifth or...</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Designate this highly</p> <p>9 confidential. I'm just teasing you.</p> <p>10 Okay. Let's go to 556.</p> <p>11 You kind of served it up on</p> <p>12 a platter. I had to go there.</p> <p>13 A. Good probe.</p> <p>14 Q. The -- 556 is a Working</p> <p>15 Paper Number 10 published by the Center</p> <p>16 on Developing Child at Harvard</p> <p>17 University, the National Scientific</p> <p>18 Counsel on the Developing Child,</p> <p>19 entitled, "Early Experiences Can Alter</p> <p>20 Gene Expression and Affect Long-Term</p> <p>21 Development."</p> <p>22 And if you could, I want to</p> <p>23 be fair and -- why don't you take a look</p> <p>24 through this real quick and then I'll ask</p>	Page 490	<p>1 other cases where it may not be true.</p> <p>2 Q. Okay. Let's go to the next</p> <p>3 page, Page 2. The red area first.</p> <p>4 "Early prenatal and</p> <p>5 postnatal experiences and exposures</p> <p>6 influence long-term outcomes by</p> <p>7 chemically altering the structure of the</p> <p>8 genes."</p> <p>9 Do you agree with that</p> <p>10 statement?</p> <p>11 A. I think that, theoretically,</p> <p>12 exposures can influence the structure of</p> <p>13 genes, as we know, based on epigenetics.</p> <p>14 I don't think it's necessarily</p> <p>15 established in autism.</p> <p>16 Q. But generally you agree that</p> <p>17 this is -- this is true, right?</p> <p>18 A. So I definitely agree that</p> <p>19 the field of epigenetics is onto</p> <p>20 something.</p> <p>21 Q. Is on what?</p> <p>22 A. Is onto something.</p> <p>23 Q. Okay. Good. Let's go to</p> <p>24 the second column.</p>	Page 492
<p>1 you a couple questions about it.</p> <p>2 MS. BROWN: And, Counsel,</p> <p>3 for the record, is there a date on</p> <p>4 this?</p> <p>5 THE WITNESS: 2010.</p> <p>6 MR. WATTS: May of 2010, I</p> <p>7 believe.</p> <p>8 THE WITNESS: Okay.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay. Let's go to Page 1,</p> <p>11 which it says, "The Issue." And on the</p> <p>12 right side, it says, "Nutritional status,</p> <p>13 exposure to toxins and drugs, and the</p> <p>14 experiences of interacting with varied</p> <p>15 environment can all modify an</p> <p>16 individual's epigenome."</p> <p>17 Do you see that, sir?</p> <p>18 A. I see that. Yeah, this is</p> <p>19 the beginning of epigenetics.</p> <p>20 Q. Okay. Do you agree with</p> <p>21 that statement?</p> <p>22 A. So this is a very broad</p> <p>23 statement. And I think that there are</p> <p>24 some cases in which this is true and</p>	Page 491	<p>1 "We are also learning from</p> <p>2 new scientific discoveries in both</p> <p>3 animals and humans that environmental</p> <p>4 factors such as certain drugs or the</p> <p>5 nutritional status of the mother have the</p> <p>6 potential to cause epigenetic changes to</p> <p>7 genes in eggs or sperm cells in the</p> <p>8 fetus."</p> <p>9 Do you agree?</p> <p>10 A. Again, this is a very broad</p> <p>11 statement, and I think in some cases,</p> <p>12 it's likely true. In other cases, it's</p> <p>13 probably irrelevant.</p> <p>14 Q. Okay.</p> <p>15 MR. WATTS: Next page. Blow</p> <p>16 up the graphic.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. "How early experiences alter</p> <p>19 gene expression and shape development."</p> <p>20 And Number 1 says, "External</p> <p>21 experiences, e.g., stress, nutrition,</p> <p>22 toxins, spark signals between neurons.</p> <p>23 "Neuro signals launch</p> <p>24 production of gene regulatory proteins</p>	Page 493

<p>1 inside the cell.</p> <p>2 "Gene regulatory proteins</p> <p>3 attract or repel enzymes that add or</p> <p>4 remove epigenetic markers.</p> <p>5 "Epigenetic markers control</p> <p>6 where and how much protein is made by a</p> <p>7 gene, effectively turning the gene on or</p> <p>8 off, thereby shaping how the brain and</p> <p>9 bodies develop."</p> <p>10 Do you see that, 1, 2, 3, 4?</p> <p>11 A. I do. This reflects the</p> <p>12 kind of framework of our understanding</p> <p>13 about epigenetics.</p> <p>14 Q. Okay. Do you agree with</p> <p>15 Concept Number 1 with respect to external</p> <p>16 experiences?</p> <p>17 MS. BROWN: Objection.</p> <p>18 Broad.</p> <p>19 THE WITNESS: So this is a</p> <p>20 broad statement. And I think it</p> <p>21 depends.</p> <p>22 So there are some cases</p> <p>23 where I suspect it's true. But in</p> <p>24 the case of autism, it's not</p>	<p>Page 494</p>	<p>1 And, I mean, I agree she</p> <p>2 uses the word "broad," and then I</p> <p>3 use the word "broad," so it may</p> <p>4 sound suspicious to you, but I'm</p> <p>5 also capable of evaluating a</p> <p>6 question and determining whether</p> <p>7 or not it's broad. In this</p> <p>8 particular case, this is a very</p> <p>9 broad question.</p> <p>10 So I think in some cases,</p> <p>11 toxins can spark signals between</p> <p>12 neurons.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. So you, as a scientist, are</p> <p>15 capable, in responding to my question,</p> <p>16 telling me it's broad without having to</p> <p>17 be coached by a lawyer?</p> <p>18 A. Yes.</p> <p>19 MS. BROWN: I object to the</p> <p>20 suggestion that there's any</p> <p>21 coaching going on here.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Lets go to Number 2, neural</p> <p>24 signal --</p>	<p>Page 496</p>
<p>1 established.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. So -- I'm interested. We</p> <p>4 have a deposition protocol that says she</p> <p>5 can say, "Objection. Form." And she</p> <p>6 says, "Objection. Broad."</p> <p>7 And you say this is a broad</p> <p>8 statement.</p> <p>9 MS. BROWN: Must be broad.</p> <p>10 MR. WATTS: Must be coached.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Let me ask you this.</p> <p>13 With respect to Number 1,</p> <p>14 external experiences, stress, nutrition,</p> <p>15 toxins spark signals between neurons.</p> <p>16 Is that true?</p> <p>17 MS. BROWN: Objection to the</p> <p>18 form of the question. Broad.</p> <p>19 MR. WATTS: Well done.</p> <p>20 THE WITNESS: So just to</p> <p>21 respond to what you said. I think</p> <p>22 when you ask a very broad</p> <p>23 question, it's hard to answer it</p> <p>24 yes or no.</p>	<p>Page 495</p>	<p>1 MR. WATTS: Maybe that's why</p> <p>2 we have the limitation "objection</p> <p>3 to form." Just curious.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Number 2, neural signals --</p> <p>6 MS. BROWN: Or to make sure</p> <p>7 people ask the right questions.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. -- launch production of gene</p> <p>10 regulatory proteins -- let me try --</p> <p>11 she's talking over me again.</p> <p>12 Number 2, neural signals</p> <p>13 launch production of gene regulatory</p> <p>14 proteins inside cell.</p> <p>15 Do you agree that that's</p> <p>16 true?</p> <p>17 A. Yes.</p> <p>18 MS. BROWN: I object to the</p> <p>19 form of that question.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Number 3, gene regulatory</p> <p>22 proteins attract or repel enzymes that</p> <p>23 add or remove epigenetic markers.</p> <p>24 Do you agree that that's</p>	<p>Page 497</p>

<p style="text-align: right;">Page 498</p> <p>1 true?</p> <p>2 MS. BROWN: Same objection.</p> <p>3 THE WITNESS: There are</p> <p>4 cases in which that is true.</p> <p>5 Again, that's a broad</p> <p>6 statement.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Epigenetic markers control</p> <p>9 where and how much protein is made by a</p> <p>10 gene, effectively turning a gene on or</p> <p>11 off, thereby shaping how brains and</p> <p>12 bodies develop.</p> <p>13 Is that true?</p> <p>14 A. There --</p> <p>15 MS. BROWN: Same objection.</p> <p>16 THE WITNESS: There are</p> <p>17 circumstances in which that is</p> <p>18 definitely true.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Okay. Let's go to Page 4.</p> <p>21 "In addition to adverse</p> <p>22 experiences, a wide variety of chemicals,</p> <p>23 nutrients, and drugs are also capable of</p> <p>24 modifying the epigenome for long-lasting</p>	<p style="text-align: right;">Page 500</p> <p>1 infants, and toddlers to environmental</p> <p>2 toxins, prescription drugs, alcohol, and</p> <p>3 illicit substances require an urgent look</p> <p>4 at what safeguards can be implemented to</p> <p>5 prevent such exposures."</p> <p>6 Do you agree with that</p> <p>7 statement?</p> <p>8 MS. BROWN: Objection to the</p> <p>9 form.</p> <p>10 THE WITNESS: Again, this is</p> <p>11 a broad statement, and I think if</p> <p>12 epigenetic changes were</p> <p>13 demonstrated to have clear</p> <p>14 negative effects, then I would</p> <p>15 agree with it.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Okay. Further down in the</p> <p>18 red. It says, "The serious" -- keep</p> <p>19 going.</p> <p>20 "The serious and continuing</p> <p>21 impact of prenatal exposure to alcohol</p> <p>22 and a wide variety of chemical</p> <p>23 substances, including prescription drugs,</p> <p>24 on child health and development calls for</p>
<p style="text-align: right;">Page 499</p> <p>1 effects on gene expression."</p> <p>2 Is that true?</p> <p>3 MS. BROWN: I object to that</p> <p>4 question.</p> <p>5 THE WITNESS: Potentially,</p> <p>6 in some cases, that might be true.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. And number -- Page 5.</p> <p>9 "Injurious experiences such</p> <p>10 as malnutrition, exposure to chemical</p> <p>11 toxins or drugs, and toxic stress before</p> <p>12 birth or in early childhood are not</p> <p>13 'forgotten' but rather are built into the</p> <p>14 architecture of the developing brain</p> <p>15 through epigenome."</p> <p>16 Is that true?</p> <p>17 MS. BROWN: Objection.</p> <p>18 THE WITNESS: In some cases</p> <p>19 it may be true.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Let's go to Page 7. The</p> <p>22 first sentence in red. Page 7.</p> <p>23 "Epigenetic changes caused</p> <p>24 by the exposure of pregnant women,</p>	<p style="text-align: right;">Page 501</p> <p>1 a more vigorous approach to environmental</p> <p>2 policies and public education."</p> <p>3 Do you conceptually agree</p> <p>4 with that statement?</p> <p>5 A. I'm not sure that I'm</p> <p>6 qualified to, like, make regulatory</p> <p>7 comments.</p> <p>8 Q. All right. Doctor, do you</p> <p>9 agree that intrauterine exposure to</p> <p>10 divalproex sodium is a predictive risk</p> <p>11 factor for autism spectrum disorder,</p> <p>12 right?</p> <p>13 A. I think it's been</p> <p>14 established that Depakote, or valproic</p> <p>15 sodium, divalproex sodium, increases the</p> <p>16 risk of autism, yes.</p> <p>17 Q. Now, in 2013, in the book</p> <p>18 "Neuroscience of Autism Spectrum</p> <p>19 Disorder," Chapter 1.6, Page 97, this is</p> <p>20 Exhibit 431, Page 97.</p> <p>21 (Document marked for</p> <p>22 identification as Exhibit</p> <p>23 Kolevzon 431.)</p> <p>24 BY MR. WATTS:</p>

<p style="text-align: right;">Page 502</p> <p>1 Q. Your book chapter ends with 2 the conclusion, "Improved understanding 3 of the nature and likelihood of 4 medication side effects in autism 5 spectrum disorder may help identify risk 6 factors to predict in advance which 7 individuals are most vulnerable."</p> <p>8 Is that what you wrote in 9 2013?</p> <p>10 A. Again, I certainly wrote 11 that. But we have to kind of pull out 12 and see the larger context in what I was 13 talking about here. I don't remember 14 this chapter specifically.</p> <p>15 Q. I'm curious. The 16 Katz/Kolevzon study, Exhibit 491. On 17 Page 3 when you all did this analysis, on 18 Page 3, did you exclude studies focused 19 on the use of medications?</p> <p>20 A. I think we were focused on 21 metabolic factors in our search criteria.</p> <p>22 Q. And so you excluded studies 23 focused on the use of medications, right?</p> <p>24 MS. BROWN: Objection.</p>	<p style="text-align: right;">Page 504</p> <p>1 Q. The website at Mount Sinai 2 says, "Certain medicines taken during 3 pregnancy may also lead to autism 4 spectrum disorder in the child."</p> <p>5 Do you see that?</p> <p>6 MS. BROWN: Hang on. Let's 7 let him take a look at it.</p> <p>8 And when we get to a good 9 spot, can we take a break?</p> <p>10 MR. WATTS: Sure.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Can you see that there on 13 Page 1, about two inches down from autism 14 spectrum disorder, under causes?</p> <p>15 A. I see that. I note this is 16 part of the early days when there was 17 concerned about the SSRIs, until the 18 studies were properly controlled for, and 19 didn't realize it was a genetic 20 compounding issue.</p> <p>21 Q. The early days. 22 Go to Page 12 of this 23 document. When was it last updated?</p> <p>24 MR. WATTS: Page 11.</p>
<p style="text-align: right;">Page 503</p> <p>1 Misstates testimony.</p> <p>2 THE WITNESS: I think we 3 were focused on metabolic factors, 4 and we didn't specifically include 5 medications. There are many other 6 papers that have looked at 7 medication effects in autism.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. There we go.</p> <p>10 Does this state that you 11 excluded studies that focused on 12 exposures outside the scope of this 13 review, such as use of medications?</p> <p>14 A. So I think my testimony is 15 that we focused on metabolic factors and 16 did not include studies of medications or 17 exposures.</p> <p>18 Q. Okay. Let me show you 19 Exhibit 520, which comes from the Mount 20 Sinai website.</p> <p>21 (Document marked for 22 identification as Exhibit 23 Kolevzon 520.)</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 505</p> <p>1 Page 10. Page 9. Page 8. 7. 2 Well, let's go to the upper 3 right-hand corner.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Do you see how I pulled it 6 off of the website on August 22, 2023?</p> <p>7 You are the clinical 8 director of the Seaver Autism Center at 9 Mount Sinai, and Mount Sinai's website, 10 as of eight days ago, had this 11 information on it, right?</p> <p>12 A. Yes. As the clinical 13 director I'm responsible for the clinical 14 operations, not the social media or 15 website operations.</p> <p>16 Q. So this is more recent than 17 the date when the defense lawyers in this 18 case told you about the chapter of the 19 second edition Textbook of Autism 20 Spectrum Disorder, right?</p> <p>21 MS. BROWN: Objection to the 22 form.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. This is fresher than that.</p>

<p>1 MS. BROWN: Same objection.  2 THE WITNESS: So, to be  3 clear, that's a vast body of  4 literature about the associations  5 between SSRIs during pregnancy and  6 the risk of autism spectrum  7 disorder, which have now been  8 well-controlled for, and it's  9 pretty clear that there is no  10 effect. Whatever effect existed,  11 existed because of genetic  12 confounding.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. So --</p> <p>15 A. Whether I said that --  16 anyway, sorry.</p> <p>17 MS. BROWN: No. You should  18 finish.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. When your employer says A,  21 and you say B, do you have any ability to  22 go and get them to clean up their website  23 so they are consistent with you?</p> <p>24 MS. BROWN: Objection to the</p>	<p>Page 506</p> <p>1 in this case back on December 15th of  2 2022?</p> <p>3 A. No. I don't use our website  4 as a source of reliable information. I  5 use the literature and peer-reviewed  6 journals.</p> <p>7 Q. Why does Mount Sinai have a  8 website in the first place? Surely they  9 are putting up what they think is  10 reliable information.</p> <p>11 A. Well, I think that the  12 information needs to be updated  13 periodically in order to remain reliable.</p> <p>14 Q. Okay.</p> <p>15 MR. WATTS: Why don't we  16 take that break that she asked  17 for.</p> <p>18 MS. BROWN: Thank you.</p> <p>19 THE VIDEOGRAPHER: The time  20 right now is 3:45 p.m. We are off  21 the record.</p> <p>22 (Short break.)</p> <p>23 THE VIDEOGRAPHER: The time  24 right now is 3:59 p.m. We're back</p>
<p>1 form. Misstates the document.</p> <p>2 THE WITNESS: So we update  3 our website periodically. And we  4 correct information or provide new  5 information.</p> <p>6 Science is an iterative  7 process. But I don't monitor the  8 website on a very consistent  9 basis.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. When you say we update it,  12 who is involved in that?</p> <p>13 A. So periodically our  14 communications director will say, hey,  15 we're taking a look at this page, look at  16 the content, would you change anything,  17 does anything need to be revised, and  18 we'll make changes.</p> <p>19 Q. Have you had any recent  20 discussions with your communications  21 director about what's on the website  22 concerning acetaminophen and autism?</p> <p>23 A. No.</p> <p>24 Q. Even though you were hired</p>	<p>Page 507</p> <p>1 on the record.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Doctor, have you done any  4 work in analyzing the prevalence of  5 autism on the island of Cuba?</p> <p>6 A. I can't say that I have.</p> <p>7 Q. Do you have any information  8 as to whether that prevalence rate is  9 lower or higher than in the United  10 States?</p> <p>11 A. So because autism is a  12 genetic disorder, you would expect  13 prevalence rates to be roughly equal  14 across the population.</p> <p>15 Q. Yes.</p> <p>16 A. However, it would depend a  17 lot on the methodology used for the  18 prevalence studies.</p> <p>19 Q. Now, you understand that  20 acetaminophen, also known as paracetamol,  21 is one of the most widely used analgesic  22 and antipyretic drugs in the world,  23 right?</p> <p>24 A. I'm aware of that, yes.</p>

<p style="text-align: right;">Page 510</p> <p>1 Q. Can we agree that nearly 2 two-thirds of the women pregnant in the 3 United States use acetaminophen during 4 their pregnancy?</p> <p>5 A. I read that that statistic 6 is correct, yeah.</p> <p>7 Q. That is a higher rate of use 8 than pregnant women across Europe use 9 acetaminophen during their pregnancy; is 10 that right?</p> <p>11 MS. BROWN: Objection to 12 form.</p> <p>13 THE WITNESS: I haven't 14 investigated rates across Europe.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Is acetaminophen available 17 over the counter in the European Union?</p> <p>18 MS. BROWN: Objection to 19 form.</p> <p>20 THE WITNESS: I haven't 21 investigated the use of 22 acetaminophen in Europe.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Okay. You've testified in</p> <p style="text-align: right;">Page 511</p> <p>1 birth trauma cases, right?</p> <p>2 A. Yes.</p> <p>3 Q. Do you remember the Davis 4 versus Menges and MidHudson Medical Group 5 case?</p> <p>6 A. I do remember that case, 7 yes.</p> <p>8 Q. A young boy named Rhyder 9 Davis, who came out blue, according to 10 his mother, suffered shoulder dystocia, 11 fractured humerus during delivery.</p> <p>12 Does that ring a bell?</p> <p>13 A. Yes.</p> <p>14 Q. Children with autism show an 15 increased evidence of perinatal 16 complications, right?</p> <p>17 MS. BROWN: Objection to the 18 form.</p> <p>19 THE WITNESS: Broadly 20 speaking, there are perinatal 21 complications that have been 22 associated with increased risk of 23 autism.</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 512</p> <p>1 Q. Okay. You wrote that in 2 your book 23 years ago when you were in 3 medical school, right?</p> <p>4 A. I may have.</p> <p>5 Q. Okay. Perinatal asphyxia 6 can increase the risk of autism?</p> <p>7 A. I think epidemiological 8 studies would suggest that 9 hypoxia-related events increase the risk, 10 yeah.</p> <p>11 Q. Inflammatory processes can 12 contribute and increase the risk of 13 autism for a subset of cases. You 14 testified to that, right?</p> <p>15 A. So I think it would depend 16 on the inflammatory process. And I think 17 it would be important to clarify that we 18 are not talking about causal factors. 19 We're talking about associated.</p> <p>20 Q. Well, did you say, 21 "Inflammatory process may contribute and 22 increase the risk for autism in a subset 23 of cases"?</p> <p>24 A. If you're quoting me, then I</p> <p style="text-align: right;">Page 513</p> <p>1 assume I said it.</p> <p>2 Q. Okay.</p> <p>3 For the record, August 4, 4 2020, Purdie versus Mercy Medical, 5 Page 13, Lines 4 through 6, Exhibit 486.</p> <p>6 In the Katz paper, did you 7 and Ms. Katz write -- Dr. Katz -- "A 8 chronic low-grade inflammatory state is 9 thought to be present in obese mothers, 10 which accompanies the fetus during its 11 intrauterine development"?</p> <p>12 A. That is thought to be the 13 case, yes.</p> <p>14 Q. What is a maternal prenatal 15 metabolic syndrome?</p> <p>16 A. I think metabolic syndrome 17 in general refers to risk of diabetes and 18 being overweight.</p> <p>19 Q. And that results in an 20 inflammatory state which can have a 21 significant impact on fetal 22 neurodevelopment, secondary to 23 neuroinflammation, and can affect synaptic plasticity, oxidative stress, as</p>
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<p style="text-align: right;">Page 514</p> <p>1 well as neurotropic and neuroprotective 2 signaling?</p> <p>3 A. Those are all hypothetical 4 mechanisms that can be associated with 5 metabolic syndrome.</p> <p>6 Q. And you wrote that on 7 Pages 2 and 3 of the Katz paper just two 8 years ago in March of 2021, right?</p> <p>9 A. I can look at the paper now 10 and confirm.</p> <p>11 MR. WATTS: Sure.</p> <p>12 Exhibit 491, Page 2 and 3, please.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. There it is on the screen.</p> <p>15 Is that what you wrote?</p> <p>16 A. That's written in there, 17 yes.</p> <p>18 Q. Acetaminophen may interrupt 19 brain development by the induction of 20 oxidative stress leading to neuronal 21 death, right?</p> <p>22 A. Can you repeat that?</p> <p>23 Q. Acetaminophen may interrupt 24 brain development by induction of</p>	<p>1 author of that chapter, yes.</p> <p>2 Q. Okay. And you are the 3 second author listed in that book 4 chapter, right?</p> <p>5 A. I am. But as I've noted, I 6 didn't have an opportunity to review. 7 And if I did, I probably would have 8 changed some of the things in that 9 chapter.</p> <p>10 Q. Okay. What's the 11 relationship between endocannabinoid 12 dysfunction and the risk of autism 13 spectrum disorder?</p> <p>14 MS. BROWN: Objection to the 15 form.</p> <p>16 THE WITNESS: There is no 17 clear relationship. There are 18 some proposed hypothetical 19 relationships.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. And what's the biologic 22 plausibility of that? Why does that make 23 sense? Why is it being proposed?</p> <p>24 MS. BROWN: I object.</p>
<p style="text-align: right;">Page 515</p> <p>1 oxidative stress leading to neuronal 2 death.</p> <p>3 MS. BROWN: Objection. 4 Lacks foundation.</p> <p>5 THE WITNESS: So I think 6 that that's a theoretical 7 mechanism that some people might 8 propose.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay. You've seen that 11 proposed in the published literature?</p> <p>12 A. I've seen that proposed in 13 the published literature.</p> <p>14 Q. You've never published that 15 that is incorrect?</p> <p>16 A. I have not published about 17 acetaminophen.</p> <p>18 Q. In the book chapter from 19 last year, it says it's also been 20 suggested that acetaminophen increases 21 the risk for ASD by causing neuronal 22 oxidative stress, citing to the 23 Ghanizadeh publication, 2012?</p> <p>24 A. So that was written by the</p>	<p>1 THE WITNESS: I don't think 2 there's been an established 3 mechanism.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. You don't know?</p> <p>6 A. I don't think there's been 7 an established mechanism that's commonly 8 accepted. I think people might propose, 9 hypothetically, that it relates to 10 glutamatergic cannabinoid regulation or, 11 perhaps, hypothetically, to immune 12 regulation.</p> <p>13 Q. Okay. You agreed in your 14 report that glutamatergic activity is 15 critical for the brain's plasticity, 16 correct?</p> <p>17 A. That is correct.</p> <p>18 Q. Excitatory and inhibitory 19 imbalance of glutamatergic activity plays 20 a role in autism spectrum disorder, 21 right?</p> <p>22 MS. BROWN: Objection to the 23 form.</p> <p>24 THE WITNESS: There's</p>

<p>1 evidence of glutamatergic and 2 GABAergic dysregulation. It's not 3 clear whether it's a causal effect 4 or a consequence.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. By the way, AM404 may 7 activate cannabinoid receptors in the 8 brain and exert effects on glutamate GABA 9 activity, right?</p> <p>10 A. I don't know that that's 11 true.</p> <p>12 Q. Well, did you write that 13 that was true in your report?</p> <p>14 A. I wrote that that is what 15 people have proposed to be true 16 theoretically.</p> <p>17 Q. All right. Have you studied 18 whether or not it is true?</p> <p>19 A. I am not a toxicologist. I 20 have not studied that, no.</p> <p>21 Q. In the Purdie versus Mercy 22 Medical case, August 4, 2020, you were 23 asked, "Would you agree that 24 environmental factors outside of a</p>	<p>Page 518</p> <p>1 "Question: Would you agree 2 that environmental factors outside of 3 genetic context can affect the glutamate 4 system in the developing fetus?</p> <p>5 "Answer: Yes, I'd probably 6 agree with that."</p> <p>7 Is that what you said?</p> <p>8 A. I said that. And I would 9 stand by it.</p> <p>10 Q. And exposures to various 11 toxins or medicines that affect the 12 glutamatergic system can affect the 13 glutamatergic function of the fetus, 14 right?</p> <p>15 MS. BROWN: Objection to the 16 form.</p> <p>17 THE WITNESS: Can you say 18 that again.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Sure.</p> <p>21 MR. WATTS: Page 85, 22 Lines 11 through 14.</p> <p>23 By MR. WATTS:</p> <p>24 Q. And you said, "Likely</p>
<p>1 genetic context can affect the glutamate 2 system in the developing fetus?"</p> <p>3 Did you say, "Yes, I'd 4 probably agree with that"?</p> <p>5 MS. BROWN: Objection to the 6 form.</p> <p>7 THE WITNESS: So if you can 8 put that up so I can look at it in 9 context --</p> <p>10 MR. WATTS: Sure.</p> <p>11 Exhibit 486. Page 83, Lines 9 12 through 19, please.</p> <p>13 MS. BROWN: Can you blow up 14 the whole page so we can see it.</p> <p>15 Thank you.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. "What role, if any, does the 18 glutamate system play in the final common 19 pathway of autism spectrum disorder?</p> <p>20 "I mean, the glutamate 21 system is implicated in many different 22 cases of autism and the glutamate system 23 is relevant to many different genes that 24 underlie autism.</p>	<p>Page 519</p> <p>1 exposures to various toxins or medicines 2 that affect the glutamatergic system can 3 impact the glutamatergic function in the 4 fetus"?</p> <p>5 A. So what I'm referring here 6 to, toxins, right, we're not talking 7 about acetaminophen, just to be clear.</p> <p>8 Q. Right. You said or 9 medicines, though, to be fair.</p> <p>10 A. To be fair.</p> <p>11 Q. Okay.</p> <p>12 Is that a true statement?</p> <p>13 A. I think in a hypothetical 14 sense, and we're talking in a very broad 15 hypothetical sense, it is certainly a 16 possibility.</p> <p>17 Q. Okay. Prenatal exposure to 18 acetaminophen has been associated in a 19 dose-dependent relationship with 20 increased DNA methylation among children 21 with ADHD.</p> <p>22 Agreed?</p> <p>23 A. So you are talking about 24 ADHD, and I'm not prepared to provide</p>

<p>1 testimony as to ADHD.  2 Q. Okay.  3 A. I haven't explored that.  4 Q. The genes affected by DNA  5 methylation are those enriched in  6 pathways involving oxidative stress and  7 neurological function.  8 Do you agree?  9 MS. BROWN: Objection to the  10 form.  11 THE WITNESS: Again, in  12 general, it's hard for me to  13 comment on isolated sentences. So  14 if you give me the context, I'm  15 happy to look at it.  16 BY MR. WATTS:  17 Q. Sure.  18 In your report did you say,  19 "Among those differentially methylated  20 regions, the region containing the CYP2E1  21 gene was associated with an increased  22 risk for autism spectrum disorder"?  23 A. Let's take a look at the  24 report.</p>	<p>Page 522</p>	<p>1 Q. Now J.M. LaSalle is  2 Dr. Janine LaSalle, right?  3 A. I don't know Dr. LaSalle's  4 first name.  5 Q. Are you aware that she was  6 an author of a study identifying the  7 CYP2E1 gene as an autism spectrum  8 disorder risk gene?  9 MS. BROWN: Objection to  10 form. Lacks foundation.  11 THE WITNESS: So I've looked  12 extensively at the genetic  13 literature, and I have not found  14 evidence that CYP2E1 is an autism  15 risk gene.  16 BY MR. WATTS:  17 Q. Have you read her article  18 entitled, "Human Molecular Genetics," in  19 2019?  20 A. I'm happy to take a look at  21 it.  22 Q. Now, with respect to  23 Exhibit 481, which is what you cited to,  24 the LaSalle paper -- no, I'm sorry. I've</p>	<p>Page 524</p>
<p>1 Q. Sure.  2 MR. WATTS: Exhibit 403,  3 Page 69, Paragraph 124.  4 BY MR. WATTS:  5 Q. Do you see that, sir?  6 A. Paragraph 125?  7 Q. 124. "Among those  8 differentiated methylated regions, the  9 region containing the CYP2E1 gene was  10 associated with increased risk for autism  11 spectrum disorder."  12 That's in your report,  13 right?  14 A. So I'm discussing the  15 results from a study by Zhu and  16 colleagues, where that was what their  17 finding was.  18 Q. Now, that's at Page 69. If  19 you go back to Page 68 just for a second.  20 You see how in Paragraph 123, you cite to  21 the LaSalle paper in Footnote 201?  22 A. Mm-hmm.  23 Q. Yes?  24 A. Yeah.</p>	<p>Page 523</p>	<p>1 got it butchered.  2 (Document marked for  3 identification as Exhibit  4 Kolevzon 484.)  5 BY MR. WATTS:  6 Q. 484. There's our guy from  7 Australia.  8 A. Back to them, yeah.  9 Q. Okay. Have you read the Zhu  10 and -- paper entitled, "Placental DNA  11 Methylation Levels at CYP2E1 and IRS2 are  12 Associated With Child Outcome in a  13 Prospective Autism Study"?</p> <p>14 A. I have.  15 Q. And you see how Janine  16 LaSalle is the, what'd you call it, the  17 last author, the senior author?  18 A. Yeah.  19 Q. Okay.  20 In the abstract, go to the  21 abstract. It says, "DNA methylation acts  22 at the interface of genetic and  23 environmental factors relevant for autism  24 spectrum disorder," right?</p>	<p>Page 525</p>

<p>1 A. That's what it says.</p> <p>2 Q. And if we go to Page 23 of</p> <p>3 48. Part of the conclusion is, "Both</p> <p>4 CYP2E1 and IRS2 are related to protein</p> <p>5 synthesis, cell proliferation, and cell</p> <p>6 metabolism consistent with previous</p> <p>7 studies of convergent gene pathways in</p> <p>8 autism spectrum disorder. These results,</p> <p>9 therefore, provide evidence that</p> <p>10 placental methylation levels reflect the</p> <p>11 intersection of genetic and environmental</p> <p>12 risk and protective factors that are</p> <p>13 expected to be useful for early</p> <p>14 intervention and prevention of autism</p> <p>15 spectrum disorder."</p> <p>16 Is that what it says?</p> <p>17 A. That's what it says. But I</p> <p>18 don't agree with the conclusions based on</p> <p>19 these data.</p> <p>20 Q. Now, when placental</p> <p>21 methylation levels reflect the</p> <p>22 intersection of genetic and environmental</p> <p>23 risk and protective factors, what is your</p> <p>24 understanding as to what is resulting in</p>	<p>Page 526</p> <p>1 risk and protective factors that are</p> <p>2 expected to be useful for early</p> <p>3 intervention and prevention of ASD?</p> <p>4 MS. BROWN: Objection to</p> <p>5 form.</p> <p>6 THE WITNESS: So very broad.</p> <p>7 So --</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Do you agree with that very</p> <p>10 broad statement?</p> <p>11 A. In general, methylation can</p> <p>12 affect the expression of different genes.</p> <p>13 And differential expression can be</p> <p>14 characteristic of certain disease states</p> <p>15 but doesn't necessarily reflect any</p> <p>16 etiological role.</p> <p>17 Q. Okay. Now, in your report</p> <p>18 at Page 73 and 74, you write that it's</p> <p>19 been postulated -- Paragraph 133.</p> <p>20 "It's been postulated that</p> <p>21 disruptions in prostaglandin signaling</p> <p>22 during early development can lead to</p> <p>23 adverse developmental outcomes, including</p> <p>24 autism spectrum disorder."</p>
<p>1 a higher risk of ASD? Is it higher</p> <p>2 methylation level at the placental area</p> <p>3 or lower?</p> <p>4 MS. BROWN: Objection to the</p> <p>5 form of the question.</p> <p>6 THE WITNESS: So I'd have to</p> <p>7 go back to the article.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. You don't know?</p> <p>10 A. I'd have to go back to the</p> <p>11 article.</p> <p>12 Q. Okay.</p> <p>13 A. But the idea that CYP2E1 is</p> <p>14 an autism risk gene, to me, is unfounded.</p> <p>15 So the fact that there is differential</p> <p>16 expression does not necessarily mean that</p> <p>17 there's any etiological role.</p> <p>18 Q. So, really, I'm not asking</p> <p>19 about CYP2E1 yet. I'm asking about</p> <p>20 placental methylation levels.</p> <p>21 A. Sure.</p> <p>22 Q. And do you agree that</p> <p>23 placental methylation levels reflect the</p> <p>24 intersection of genetic and environmental</p>	<p>Page 527</p> <p>1 Do you see that?</p> <p>2 A. Yeah. I'm summarizing some</p> <p>3 of what the literature --</p> <p>4 Q. Have you done any research</p> <p>5 yourself with respect to prostaglandin</p> <p>6 synthesis pathways and signaling?</p> <p>7 A. So in my 20-some-odd years</p> <p>8 of experience going to conferences and</p> <p>9 talking to colleagues, I have some</p> <p>10 understanding of what the common pathways</p> <p>11 are and the generally accepted causal</p> <p>12 theories. And prostaglandin synthesis is</p> <p>13 not one of them.</p> <p>14 Q. So, respectfully, that</p> <p>15 wasn't my question. I was asking you</p> <p>16 about you doing original research.</p> <p>17 Have you done any original</p> <p>18 research yourself with respect to</p> <p>19 prostaglandin signaling --</p> <p>20 A. I have not.</p> <p>21 Q. Okay. Do you agree that</p> <p>22 acetaminophen acts as a cyclooxygenase</p> <p>23 inhibitor?</p> <p>24 A. I think that's one of the</p>
	<p>Page 529</p>

<p>1 proposed mechanisms of action.  2 Q. Do you agree that that's  3 true?  4 A. I don't have the knowledge  5 or background to determine that.  6 Q. Okay. Do you agree that  7 cyclooxygenase inhibitors prevent  8 prostaglandin synthesis?  9 A. I understand that that's  10 been postulated. I have no experience to  11 confirm that.  12 Q. So no way to rebut it or  13 confirm it, is what you're saying?  14 A. It's outside of my  15 expertise.  16 Q. Have you read the Addo  17 paper, Exhibit 482.  18 (Document marked for  19 identification as Exhibit  20 Kolevzon 482.)  21 BY MR. WATTS:  22 Q. Have you seen this before?  23 MR. WATTS: Put that on the  24 left side and put Exhibit 404 up</p>	<p>Page 530</p>	<p>1 And part of what's on  2 Page 5, just so you know where I'm going.  3 It says, "Our data suggests that the  4 prostaglandin synthesis pathway may be  5 disrupted in the placenta related to in  6 utero acetaminophen use."  7 You can see that, right?  8 MS. BROWN: Take as long as  9 you need.  10 BY MR. WATTS:  11 Q. It's up on the screen.  12 A. So what you've written --  13 what you've read is what's written.  14 Q. Okay.  15 A. I would probably look more  16 deeply into his methods. I think it  17 speaks to the point that I made before,  18 which is that although there could be  19 methylation or expression changes,  20 doesn't necessarily reflect an  21 etiological mechanism.  22 Q. Well --  23 A. So I agree that it's written  24 on the screen, but I can't agree or</p>
<p>1 on the right.  2 BY MR. WATTS:  3 Q. Exhibit 404, if you go to  4 the second page, is your materials  5 considered list.  6 A. Mm-hmm.  7 Q. Do you see between Adams and  8 Aishworiya where Addo would go, it's not  9 there?  10 A. I see that it's not there.  11 And I am not familiar with this article.  12 Q. Okay. So you haven't read  13 the Addo paper before coming here today,  14 fair?  15 MS. BROWN: Objection to  16 form.  17 THE WITNESS: I don't -- I  18 don't recall.  19 BY MR. WATTS:  20 Q. Okay. Let's just look at  21 Page 5 real quick.  22 A. Can you just give me a  23 second to read what this is about?  24 Q. Sure.</p>	<p>Page 531</p>	<p>1 disagree, for that matter --  2 Q. Yeah, you haven't studied  3 it. I mean, this is the first time  4 you've ever seen it, fair?  5 A. Fair.  6 Q. Okay. Now, let's go to  7 endocrine disruption for a second.  8 You agree that the endocrine  9 system plays a clear role in prenatal  10 brain development, right?  11 MS. BROWN: Objection to  12 form.  13 THE WITNESS: Yes.  14 BY MR. WATTS:  15 Q. You agree that the endocrine  16 system plays a clear role in prenatal  17 brain development, because disruptions in  18 endocrine function can lead to a wide  19 array of adverse developmental outcomes,  20 agreed?  21 A. I believe you're reading  22 from my report, and I agree with my  23 report.  24 Q. Now, for that reason, if we</p>

1 go to Exhibit 424, which is Mount Sinai's  
 2 publication in 2012 where they published  
 3 a list of the top ten toxic chemicals  
 4 suspected to cause autism and learning  
 5 disabilities.

6 (Document marked for  
 7 identification as Exhibit  
 8 Kolevzon 424.)

9 BY MR. WATTS:

10 Q. The Center for Environmental  
 11 Health Center -- or the Children's  
 12 Environmental Health Center -- go to  
 13 Page 2 -- put out a list and it says,  
 14 "CEHC developed a list of ten chemicals  
 15 found in consumer products that are  
 16 suspected to contribute to autism and  
 17 learning disabilities to guide a research  
 18 strategy to discover potentially  
 19 preventable environmental causes. The  
 20 top ten chemicals are..."

21 Is Number 6 endocrine  
 22 disruptors?

23 A. So, if you're -- yes, the  
 24 Number 6 is listed as endocrine

1 disruptors.

2 And all of these are worthy  
 3 for exploration. And all of these are  
 4 important to study. But none of these  
 5 have been demonstrated to be associated  
 6 with autism.

7 Q. Acetaminophen is a  
 8 well-known endocrine disruptor?

9 A. I can't say that that's  
 10 true.

11 Q. Can you say that it's  
 12 untrue?

13 A. As I said, I'm not qualified  
 14 to analyze the endocrine effects of  
 15 acetaminophen. I can say that it's not  
 16 associated with autism, however.

17 Q. Well, acetaminophen may  
 18 interfere with maternal and neonatal  
 19 hormones, e.g., the thyroid related to  
 20 brain development, agreed?

21 A. So there may be many  
 22 different mechanisms. It's not clear to  
 23 me that any of them are reliably  
 24 established.

1 But what has been pretty  
 2 reliably established is that there isn't  
 3 a significant association in  
 4 epidemiological studies between  
 5 acetaminophen use during pregnancy and  
 6 autism as the outcome.

7 Q. Doctor, does serotonin  
 8 metabolism dysfunction -- does your book  
 9 chapter from 2022 say it's one of the few  
 10 consistent biological explanations  
 11 leading to autism spectrum disorder?

12 A. So the role of the serotonin  
 13 system in autism is one of the more  
 14 consistent findings, although it remains  
 15 hypothesis generating.

16 Q. In the book chapter, at  
 17 Page 187, says, "These findings suggest  
 18 prenatal exposure to SSRIs may have a  
 19 causal role in ASD by operating directly  
 20 on the developing brain."

21 A. So, thankfully, over time,  
 22 because science is an iterative process,  
 23 we've learned that SSRI use during  
 24 pregnancy is confounded by indication,

1 and actually once you control for  
 2 genetics, you attenuate the effects. So  
 3 the effect is more about the mom, not  
 4 about the SSRIs.

5 Q. And you said that in  
 6 litigation involving SSRIs?

7 A. Have I said that in  
 8 litigation? I probably put that in a  
 9 report involving SSRI.

10 Q. What is BDNF?

11 A. What does it stand for?

12 Q. Yeah.

13 A. Brain-derived neurotrophic  
 14 factor.

15 Q. Say again?

16 A. Brain-derived neurotrophic  
 17 factor.

18 Q. Okay. Does acetaminophen  
 19 exposure impact BDNF in the neonatal  
 20 brain?

21 A. I'm not an expert in this  
 22 area. I couldn't say whether that was  
 23 true or not. I'm sure it's been  
 24 proposed.

<p>1 Q. What you can say is BDNF is  2 a critical growth factor for brain  3 development and plasticity, right?  4 A. I've said that, and I think  5 that continues to be the case, yes.  6 Q. All right. Now, with  7 respect to prostaglandin signaling and  8 the risk for autism spectrum disorder,  9 your report says it's derived from gene  10 expression studies in the cyclooxygenase  11 knockout mice, 219, another animal  12 experiment showing effects of autism --  13 on autism spectrum disorder-related  14 symptoms, right?  15 A. So when I review the  16 literature --  17 Q. I'm sorry?  18 A. I said when I review the  19 literature and I try to figure out from  20 where this theory was derived, it seemed  21 to be, in part, derived from some animal  22 studies, including cyclooxygenase  23 knockout mice.  24 Q. Okay. Let me show you a</p>	<p>Page 538  1 identification as Exhibit  2 Kolevzon 564.)  3 (Video played.)  4 DR. KOLEVZON: But so this  5 has been sort of our model in  6 terms of treatment development.  7 This is not a novel model, right.  8 This is something that cancer  9 treatments have been following for  10 a long time.  11 But for us, again, this kind  12 of window into these single genes  13 provides opportunities to, A, you  14 know, discover an actual gene that  15 we consider to be pathogenic, as  16 Colleen explained. And then we  17 can sort of replicate that  18 biological defect in a model  19 system, using rats or mice or fish  20 or even human neurons, and you can  21 do things with these kinds of  22 models that you obviously can't do  23 in humans -- and I'll talk about  24 some of those details.</p>
<p>Page 539  1 couple of videos where you talked about  2 this.  3 MR. WATTS: Exhibit 456.  4 November 16, 2017, at the Advances  5 in Autism Conference.  6 TRIAL TECH: I'm sorry, did  7 you say 426?  8 MR. WATTS: 456.  9 (Document marked for  10 identification as Exhibit  11 Kolevzon 456.)  12 (Video played.)  13 DR. KOLEVZON: So then what  14 do you want to do. Think about  15 our model where you're going to go  16 from mouse to physiology, which we  17 understand, to now thinking about  18 treatment.  19 (Video playback ended.)  20 BY MR. WATTS:  21 Q. And let me show you  22 Exhibit 564, also from 2017, but two  23 months earlier on September 10th.  24 (Document marked for</p>	<p>Page 541  1 But then it helps you really  2 understand what's -- what's going  3 on in terms of the brain. Where  4 actually are the defects  5 occurring. What's the problem in  6 terms of nerve cell communication.  7 And then eventually you can start  8 thinking on that basis what types  9 of --  10 (Video playback ended.)  11 BY MR. WATTS:  12 Q. Now, back when you had a  13 beard in 2017, is that what you said?  14 A. Oh, yeah. And I still say  15 that.  16 Q. Good beard. I like it.  17 One more. Exhibit 458,  18 November 16, 2017.  19 (Document marked for  20 identification as Exhibit  21 Kolevzon 458.)  22 (Video played.)  23 DR. KOLEVZON: And so the  24 ways that you want to try to</p>

<p>1 measure and sort of have your 2 animal studies inform your 3 clinical studies and then have 4 your clinical studies inform your 5 animal studies, that's what's 6 called translational science, 7 right.</p> <p>8 (Video playback ended.)</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Is that something you said 11 back in 2017?</p> <p>12 A. Yep.</p> <p>13 Q. Let's go to 2020, October 7, 14 489.</p> <p>15 (Document marked for 16 identification as Exhibit 17 Kolevzon 489.)</p> <p>18 (Video played.)</p> <p>19 DR. KOLEVZON: To develop 20 new treatments, we've adopted the 21 following approach.</p> <p>22 First, we identify a 23 specific gene that causes autism 24 when mutated. Then we replicate</p>	<p>Page 542</p> <p>1 provide some context here, right, because 2 what we're talking about is translational 3 science, where we use model systems that 4 are extremely valuable in developing and 5 testing new treatments, because we can do 6 things in a model system and manipulate 7 models in a way that we can't manipulate 8 in humans. And it can provide us with 9 evidence of proof of concept, right?</p> <p>10 We want to think about, oh, 11 this treatment might work in the model. 12 Maybe it will work in humans. But in no 13 way does the model recapitulate human 14 condition. If, at best, it recapitulates 15 some of the biology.</p> <p>16 Q. And it's true you can use 17 both human and animal studies to show 18 that something is occurring, right?</p> <p>19 A. I'd say, sorry, but broad 20 and vague statement. Could you be more 21 specific.</p> <p>22 Q. I'll give you a specific 23 example.</p> <p>24 A. Thanks.</p>
<p>1 the genetic defect in the model 2 system using an animal or even a 3 brain cell derived from a 4 patient's blood cells.</p> <p>5 We can use these models to 6 better understand the biology and 7 understand what's going wrong with 8 brain cell connections. Then we 9 study the various treatments, but, 10 first, in the model, to see if 11 they can reverse the biological 12 changes associated with the 13 genetic defects. If the 14 treatments work in the models, 15 then we move to clinical trials in 16 humans affected by the same 17 genetic changes.</p> <p>18 There's enormous promise in 19 this approach and many --</p> <p>20 (Video playback ended.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Is that part of what you 23 said in 2020?</p> <p>24 A. Yes. And I'd like to just</p>	<p>Page 543</p> <p>1 Q. Let's go back to the Katz 2 paper.</p> <p>3 MR. WATTS: Exhibit 491.</p> <p>4 Pages 2 and 3.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. "Human and animal studies 7 have shown that maternal prenatal 8 metabolic syndrome includes increased 9 adiposity and insulin resistance and 10 results in an inflammatory state, as well 11 as altered leptin signaling. These 12 changes have significant impact on fetal 13 neurodevelopment secondary to 14 neuroinflammation and can affect synaptic 15 plasticity, oxidative stress, as well as 16 neurotrophic and neuroprotective 17 signaling."</p> <p>18 Is that part of what you 19 wrote in 2021?</p> <p>20 A. I wrote that. And I think 21 in this case it's important to see that 22 the animal studies provide a window 23 that's worth hypothesis testing, just 24 like the animal studies with treatments</p>

<p>1 provide a window.</p> <p>2 But if you do a treatment</p> <p>3 study in a human being, no matter what</p> <p>4 the animal studies show, if the treatment</p> <p>5 fails in the human being, you wouldn't</p> <p>6 continue to say, oh, that treatment works</p> <p>7 because it worked in animals.</p> <p>8 You'd only say it works if</p> <p>9 it worked in the humans. And you</p> <p>10 wouldn't be able to say it on the basis</p> <p>11 of one study. You'd have to say it on</p> <p>12 the basis of multiple studies across</p> <p>13 multiple sites.</p> <p>14 Q. Doctor, let me show you</p> <p>15 Exhibit 445.</p> <p>16 (Document marked for</p> <p>17 identification as Exhibit</p> <p>18 Kolevzon 445.)</p> <p>19 BY MR. WATTS:</p> <p>20 Q. This is a paper that you</p> <p>21 wrote with Theresa Tavassoli, titled,</p> <p>22 "Measuring Sensory Reactivity in Autism</p> <p>23 Spectrum Disorder: Application and</p> <p>24 Simplification of a</p>	<p>Page 546</p>	<p>1 attention switching, attention detail,</p> <p>2 imagination, and communication. Results</p> <p>3 from the AQ have been replicated</p> <p>4 cross-culturally and across different age</p> <p>5 groups with good test/retest</p> <p>6 reliability."</p> <p>7 Did I read that correctly?</p> <p>8 A. Yeah. The AQ is a good</p> <p>9 screening tool, but it's not a diagnostic</p> <p>10 measure.</p> <p>11 Q. Now, in addition to that,</p> <p>12 you and I have already talked about the</p> <p>13 two most common parent report tools are</p> <p>14 the Modified Checklist for Autism in</p> <p>15 Toddlers, or the M-CHAT-R, right?</p> <p>16 A. I don't know that we've</p> <p>17 talked about that, but --</p> <p>18 Q. Do you agree?</p> <p>19 A. -- that is a correct</p> <p>20 statement.</p> <p>21 Q. And childhood autism --</p> <p>22 Childhood Autism Spectrum Test, or CAST,</p> <p>23 is also used broadly, right?</p> <p>24 A. I don't know that it's used</p>	<p>Page 548</p>
<p>1 Clinician-Administered Sensory</p> <p>2 Observation Scale."</p> <p>3 Do you see that, sir?</p> <p>4 A. Yes.</p> <p>5 MS. BROWN: I just gave him</p> <p>6 the hardcopy, so take a minute to</p> <p>7 look if you need to.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. And let's go to Page 288.</p> <p>10 And my only point of</p> <p>11 bringing this up is on the first column,</p> <p>12 you all write, "In general, sensory</p> <p>13 questionnaires are considered valuable</p> <p>14 screening tools for sensory issues and</p> <p>15 have the advantage of being low cost and</p> <p>16 easy to administer," right?</p> <p>17 A. Oh, yeah.</p> <p>18 Q. And on the bottom of 288,</p> <p>19 second column, and 289, you write, "The</p> <p>20 Autism Spectrum Quotient, AQ, was used to</p> <p>21 screen autism spectrum disorder traits in</p> <p>22 the TD group. The AQ is a 50-item</p> <p>23 questionnaire with five subscales</p> <p>24 measuring autistic traits, social skills,</p>	<p>Page 547</p>	<p>1 broadly, but it's been used.</p> <p>2 Q. And then we've talked about,</p> <p>3 before, ADOS, the Autism Diagnostic</p> <p>4 Observation Schedule, right?</p> <p>5 A. I don't think we've talked</p> <p>6 about it before, but that is definitely a</p> <p>7 gold-standard diagnostic tool.</p> <p>8 Q. And in your previous report</p> <p>9 in the Daniels-Feasel case, Exhibit 479,</p> <p>10 you said, "ADOS has improved our ability</p> <p>11 to detect."</p> <p>12 Do you agree?</p> <p>13 TRIAL TECH: What page?</p> <p>14 THE WITNESS: Sorry. Can</p> <p>15 you finish the sentence.</p> <p>16 MR. WATTS: Page 10 of 94.</p> <p>17 It's down at the bottom.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. You write that, "The Autism</p> <p>20 Diagnostic Observation Schedule, ADOS,</p> <p>21 and the Autism Diagnostic</p> <p>22 Interview-Revised have improved our</p> <p>23 ability to test for autism, right?</p> <p>24 A. I think that's true, yes.</p>	<p>Page 549</p>

<p>1 Q. Now, have you ever used the 2 population-based cohort in Sweden called 3 PAGES?</p> <p>4 A. I have been part of 5 collaborations that have used PAGES, yes.</p> <p>6 Q. Okay. What other Swedish, 7 Danish, European population-based cohorts 8 have you worked in?</p> <p>9 A. Numerous ones. I can't 10 recall sitting here.</p> <p>11 Q. Have you ever studied any of 12 those cohorts with respect to 13 acetaminophen?</p> <p>14 A. So we may have queried some 15 of those samples. I don't recall whether 16 we have specifically.</p> <p>17 Q. Okay. Doctor, we talked a 18 little bit about the fact that third 19 parties fund research that Mount Sinai 20 does; is that right?</p> <p>21 MS. BROWN: Objection to the 22 form.</p> <p>23 THE WITNESS: So I'll speak 24 to my own research and the</p>	<p>Page 550</p> <p>1 MS. BROWN: Okay. I object. 2 THE WITNESS: I am not aware 3 nor do I follow the payments that 4 are made to Mount Sinai Hospital. 5 I follow the payments that are 6 made to me.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. So, as you understand the 9 purpose of OpenPayments data, it's 10 required by the federal government so 11 people can know how much money a 12 particular pharmaceutical company has 13 spent to fund research at a particular 14 hospital facility, right?</p> <p>15 A. I understand that's the 16 purpose of the law, yes.</p> <p>17 Q. Okay. And, again, have you 18 ever gone on there and seen how much 19 money came from the Janssen entities to 20 Mount Sinai?</p> <p>21 A. I have --</p> <p>22 MS. BROWN: Objection to 23 form.</p> <p>24 THE WITNESS: I have not,</p>
<p>1 research of the Seaver Autism 2 Center. It's funded by 3 foundations. It's funded by the 4 federal government. It's funded 5 by industry.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Are you aware of a 8 legislatively required database known as 9 openpayments.com?</p> <p>10 A. I am, yes.</p> <p>11 Q. And if we could put up 12 Exhibit 528 on the screen. (Document marked for identification as Exhibit Kolevzon 528.)</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Are you aware that since 18 2016, various Janssen industries have 19 made payments to Mount Sinai Hospital 20 exceeding \$10 million?</p> <p>21 MS. BROWN: Objection to this document.</p> <p>23 Did you make it?</p> <p>24 MR. WATTS: I did.</p>	<p>Page 551</p> <p>1 no.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Okay. Do you know, if we 4 added 2023 to it, how much more money 5 Janssen has paid Mount Sinai in payments?</p> <p>6 MS. BROWN: Objection to 7 form.</p> <p>8 THE WITNESS: I do not know.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. As we look at Exhibit 510. (Document marked for identification as Exhibit Kolevzon 510.)</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Mount Sinai has a data -- or 16 a website that's entitled, "Our Partners, 17 Our Relationships With Industry Provide 18 Access to Partners and Funding 19 Opportunities."</p> <p>20 Can you see that?</p> <p>21 A. Yes.</p> <p>22 Q. And first up in terms of the 23 list of our partners is Johnson &amp; 24 Johnson, right?</p>

<p>1 A. That's on the list among 2 many industry partners, yes. 3 Q. In addition to Johnson &amp; 4 Johnson, has Mount Sinai received gifts 5 from Royalty Pharma? 6 MS. BROWN: Objection to the 7 form. 8 THE WITNESS: I would have 9 no way of knowing that. 10 MR. WATTS: Let me show you 11 Exhibit 500, which is a Mount 12 Sinai press release. 13 (Document marked for 14 identification as Exhibit 15 Kolevzon 500.) 16 MS. BROWN: Hang on. Let us 17 get it, please. 18 BY MR. WATTS: 19 Q. You see it talks about a 20 \$20 million gift from Royalty Pharma? 21 MS. BROWN: Hey, I just want 22 to give him the document before 23 you start asking questions about 24 it.</p>	<p>Page 554</p>	<p>1 enjoys royalties on 35 commercial 2 products, including Johnson &amp; Johnson's 3 Imbruvica and Tremfya, right? 4 A. That's what it says on the 5 page. 6 Q. Let's go to Page 501 and 7 look at the "Our History of Royal 8 Pharma." 9 It says they "are the 10 largest buyer of biopharmaceutical 11 royalties and a leading funder of 12 innovation across the biopharmaceutical 13 industry." 14 And then it talks about 15 "assembling a portfolio of royalties 16 entitling us to payments on top-line 17 sales of many of the industry's leading 18 therapies, including Johnson &amp; Johnson's 19 Imbruvica and Tremfya." 20 Can you see that? 21 MS. BROWN: Objection. 22 Lacks foundation. 23 THE WITNESS: I can see that 24 it's written on the page.</p>	<p>Page 556</p>
<p>1 MR. WATTS: Get 401 -- I 2 mean, get 501, 502, and 503 while 3 you are there. 4 (Document marked for 5 identification as Exhibit 6 Kolevzon 501.) 7 (Document marked for 8 identification as Exhibit 9 Kolevzon 502.) 10 (Document marked for 11 identification as Exhibit 12 Kolevzon 503.) 13 THE WITNESS: So this is an 14 announcement about a gift that's 15 meant to identify, interrogate, 16 and combat health inequities by 17 building a future that is more 18 equitable for all communities, 19 including those that are 20 non-white, low-income, immigrant, 21 uninsured and LGBTQ+. 22 BY MR. WATTS: 23 Q. And Royalty Pharma is a 24 company, if you look at Page 4, that</p>	<p>Page 555</p>	<p>1 BY MR. WATTS: 2 Q. Doctor, as we go to 502 -- 3 put that on the left and put 503 on the 4 right. 5 MS. BROWN: Where did 502 6 come from? 7 MR. WATTS: I'll get you 8 that. I -- 9 MS. BROWN: And 503. Can we 10 just identify what these are? 11 MR. WATTS: Yeah. If you go 12 to the Google machine and turn it 13 on, type in the top ten owners of 14 Johnson &amp; Johnson, this comes up. 15 MS. BROWN: Okay. So a 16 lawyer did that and created these 17 two exhibits? 18 MR. WATTS: No, I pulled it 19 off the Google machine. 20 MS. BROWN: Okay. I object. 21 These lack foundation. 22 MR. WATTS: I'll get you the 23 URLs. 24 MS. BROWN: All right.</p>	<p>Page 557</p>

<p style="text-align: right;">Page 558</p> <p>1 BY MR. WATTS:</p> <p>2 Q. On the left we see that the</p> <p>3 top four owners of Johnson &amp; Johnson are</p> <p>4 the Vanguard Group, SSGA Fund Management,</p> <p>5 Inc., BlackRock Fund Advisors, and Geode</p> <p>6 Capital Management, all of whom are on</p> <p>7 the list of the top ten owners of Royalty</p> <p>8 Pharma.</p> <p>9 Do you see that?</p> <p>10 MS. BROWN: Objection.</p> <p>11 Lacks foundation.</p> <p>12 THE WITNESS: I can say that</p> <p>13 I am totally unqualified and this</p> <p>14 is so outside of my scope, that I</p> <p>15 can read what's on the page, but I</p> <p>16 have no way of evaluating it.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Does Mount Sinai accept</p> <p>19 grants from third parties that are funded</p> <p>20 by pharmaceutical companies?</p> <p>21 MS. BROWN: Objection to the</p> <p>22 form of the question.</p> <p>23 THE WITNESS: I think that's</p> <p>24 a vague statement. And I can't</p>	<p style="text-align: right;">Page 560</p> <p>1 MS. BROWN: Also, who are we</p> <p>2 suggesting is money laundering?</p> <p>3 MR. WATTS: I used it as an</p> <p>4 example.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Let me just ask you, are you</p> <p>7 aware of third-party entities through</p> <p>8 which Johnson &amp; Johnson has routed</p> <p>9 payments to Mount Sinai on top of what</p> <p>10 we've already discussed?</p> <p>11 MS. BROWN: I emphatically</p> <p>12 object to these questions as not</p> <p>13 based in facts or truth or</p> <p>14 relevance.</p> <p>15 MR. WATTS: I know. We'll</p> <p>16 get to it.</p> <p>17 THE WITNESS: I'm not aware</p> <p>18 now, no.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. In terms of other pharma</p> <p>21 companies that pay you stipends, you are</p> <p>22 on the advisory boards for Ovid</p> <p>23 Therapeutics, right?</p> <p>24 A. Yes.</p>
<p style="text-align: right;">Page 559</p> <p>1 say yes or no without more</p> <p>2 specifics.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. I'm going to use an example.</p> <p>5 But I don't mean to suggest it's illegal,</p> <p>6 but you know what money laundering is?</p> <p>7 MS. BROWN: I object to the</p> <p>8 form of the question.</p> <p>9 THE WITNESS: I'm familiar</p> <p>10 with the --</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Go ahead.</p> <p>13 A. I'm familiar with the idea</p> <p>14 of money laundering.</p> <p>15 Q. And that is routing the true</p> <p>16 source of the money through some third</p> <p>17 party so you can hide its true source,</p> <p>18 right?</p> <p>19 MS. BROWN: I object to this</p> <p>20 entire line of questioning.</p> <p>21 THE WITNESS: Again, I'm</p> <p>22 totally unqualified to be</p> <p>23 answering questions about money</p> <p>24 laundering.</p>	<p style="text-align: right;">Page 561</p> <p>1 Q. RetroVirox Therapeutics?</p> <p>2 A. I'm on the board. I do not</p> <p>3 receive a stipend.</p> <p>4 Q. Do you have stock options?</p> <p>5 A. No.</p> <p>6 Q. Okay. Jaguar Therapeutics?</p> <p>7 A. I'm an advisor to Jaguar</p> <p>8 Therapeutics, yes.</p> <p>9 Q. Are you paid for your time?</p> <p>10 A. I do get paid for my time if</p> <p>11 I bill for it.</p> <p>12 Q. Okay. Are you paid for your</p> <p>13 time for RetroVirox Therapeutics?</p> <p>14 A. I have not been paid for my</p> <p>15 time for RetroVirox.</p> <p>16 Q. Do you expect to be paid?</p> <p>17 A. I -- at some point in the</p> <p>18 future, if they are successful.</p> <p>19 Q. Okay. You consult with</p> <p>20 Acadia?</p> <p>21 A. I have consulted to Acadia</p> <p>22 in the past.</p> <p>23 Q. Alkermes?</p> <p>24 A. Alkermes, in the past, yes.</p>

<p>1 Q. GW Pharmaceuticals?</p> <p>2 A. I participated in an</p> <p>3 advisory board call for GW, yes.</p> <p>4 Q. Were you compensated for</p> <p>5 your time --</p> <p>6 A. Yes.</p> <p>7 Q. Neuren Pharmaceuticals, or</p> <p>8 Neuren Pharmaceuticals?</p> <p>9 A. I've consulted to Neuren.</p> <p>10 Q. Clinibis Labs?</p> <p>11 A. I have --</p> <p>12 Q. I think I mispronounced</p> <p>13 that. Clinilabs --</p> <p>14 A. Clinilabs, yes.</p> <p>15 Q. -- Drug Development</p> <p>16 Corporation?</p> <p>17 A. I have a consulting</p> <p>18 agreement. I haven't actually consulted</p> <p>19 with them yet.</p> <p>20 Q. Okay. Scioto Biosciences?</p> <p>21 A. I have consulted with them</p> <p>22 in the past.</p> <p>23 Q. Seaside Therapeutics?</p> <p>24 A. I've received grant support</p>	Page 562	<p>1 funded some studies that we did early on,</p> <p>2 but I don't consult to them, no.</p> <p>3 Q. Novartis?</p> <p>4 A. I don't consult to Novartis.</p> <p>5 Q. Novo Nordisk?</p> <p>6 A. I don't consult to Novo</p> <p>7 Nordisk.</p> <p>8 Q. Roche?</p> <p>9 A. I don't consult to Roche, as</p> <p>10 far as I know.</p> <p>11 Q. Okay. But you do consult</p> <p>12 for Hoffmann-La Roche, right?</p> <p>13 A. I think I have received</p> <p>14 funding for research, which is different</p> <p>15 than consulting.</p> <p>16 Q. I can never tell the</p> <p>17 difference between the two, Hoffmann-La</p> <p>18 Roche, Roche.</p> <p>19 Okay. Let me ask you this.</p> <p>20 How many litigations have you testified</p> <p>21 in, just ballpark?</p> <p>22 A. I think total, between trial</p> <p>23 testimony and depositions, I think it's</p> <p>24 eight or nine.</p>
<p>1 from Seaside, but I have not consulted</p> <p>2 with them.</p> <p>3 Q. Okay. Hoffmann-La Roche?</p> <p>4 A. I have received grant</p> <p>5 support for studies to do the project,</p> <p>6 but I haven't consulted with them, as far</p> <p>7 as I can remember.</p> <p>8 MR. WATTS: If we can go</p> <p>9 back to 510, please. Second page.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Have you consulted with</p> <p>12 Merck?</p> <p>13 A. Not that I recall.</p> <p>14 Q. GSK?</p> <p>15 A. I think GSK, or some</p> <p>16 subsidiary, funded studies that I was</p> <p>17 involved in.</p> <p>18 Q. Okay. Is that Lan Bio on</p> <p>19 the right?</p> <p>20 Do you know what that is?</p> <p>21 A. I don't.</p> <p>22 Q. Okay. Have you consulted</p> <p>23 with Eli Lilly?</p> <p>24 A. I think Eli Lilly may have</p>	Page 563	<p>1 Q. Okay. Can you tell me what</p> <p>2 the McSweeney versus South Hampton</p> <p>3 Pediatric Associates is about?</p> <p>4 MS. BROWN: Only if that's</p> <p>5 been disclosed.</p> <p>6 MR. WATTS: It was. It was</p> <p>7 a prior testimony listed.</p> <p>8 MS. BROWN: Okay.</p> <p>9 THE WITNESS: I don't</p> <p>10 remember the details of that case.</p> <p>11 I remember that it was, broadly</p> <p>12 speaking, a medical malpractice</p> <p>13 case.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. In Suffolk County, New York?</p> <p>16 A. Correct.</p> <p>17 Q. Do you know who the</p> <p>18 plaintiffs' lawyer who took your</p> <p>19 deposition was?</p> <p>20 A. This was in New York, so I</p> <p>21 don't believe they have depositions, but</p> <p>22 I was in trial.</p> <p>23 Q. I wish I lived in such a</p> <p>24 state.</p>

<p style="text-align: right;">Page 566</p> <p>1 Tell me about the Ting 2 versus Christina Ring case in Boulder, 3 Colorado?</p> <p>4 MS. BROWN: Same 5 instruction.</p> <p>6 MR. WATTS: Same answer. 7 These are all prior testimonies.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Go ahead.</p> <p>10 A. So I don't remember the 11 details of the case other than to 12 remember that it was a medical 13 malpractice case.</p> <p>14 Q. Anthem versus Franciscan 15 Health -- Health System case in 16 Washington?</p> <p>17 A. I don't remember the details 18 of that case at all.</p> <p>19 Q. Okay. Hayes versus Johns 20 Hopkins?</p> <p>21 A. I don't remember the 22 details.</p> <p>23 Q. Anderson versus Johns 24 Hopkins?</p>	<p style="text-align: right;">Page 568</p> <p>1 I can't remember the name. 2 Sorry. He had an interesting name. 3 Storm maybe.</p> <p>4 Q. Sorry?</p> <p>5 A. Storm maybe was his name. 6 We can look it up.</p> <p>7 Q. Maybe he's related to Stormy 8 Daniels?</p> <p>9 MS. BROWN: Things are going 10 off the rails rapidly here. We 11 are down to the bottom.</p> <p>12 MR. WATTS: Segue there. 13 Not me.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Okay. Let's go to 16 Exhibit 506 and 544. Put them up left 17 and right. (Document marked for identification as Exhibit Kolevzon 506.) (Document marked for identification as Exhibit Kolevzon 544.)</p> <p>18 BY MR. WATTS:</p>
<p style="text-align: right;">Page 567</p> <p>1 A. Now, that one I should 2 remember, because it was quite recent. 3 That was a medical malpractice case, yes. 4 I remember that case.</p> <p>5 Q. Okay. What did it involve?</p> <p>6 A. It involved a claim that a 7 child who had hypoxic-ischemic 8 encephalopathy due to some perinatal 9 complication had autism.</p> <p>10 Q. Okay. And when you said it 11 was very recent, when were you deposed in 12 that case?</p> <p>13 A. I think that was in the 14 beginning of the summer, maybe the end of 15 the spring.</p> <p>16 Q. And did they have the joy of 17 deposing you in Kingston, New York?</p> <p>18 A. No. They did it by Zoom, 19 actually.</p> <p>20 Q. Okay. Who took your 21 deposition?</p> <p>22 A. Oh, I remember the person's 23 name. He had a -- can I get that as a 24 multiple choice question?</p>	<p style="text-align: right;">Page 569</p> <p>1 Q. Okay. Exhibit 506 is Bates 2 page Kolevzon 1 through 108, and 3 Exhibit 544 is Bates page Kolevzon 109 4 through 115.</p> <p>5 And this is your 6 so-called -- I'll just call it your 7 correspondence file involving when you 8 were talking to Steve Tillery?</p> <p>9 A. Yep.</p> <p>10 Q. And my first question is 11 this: 12 What led to the second 13 production in Exhibit 544 that wasn't 14 included in the first that was 15 Exhibit 506; do you know?</p> <p>16 MS. BROWN: Objection to the 17 form.</p> <p>18 THE WITNESS: So sorry, can 19 you -- I don't know the 20 difference.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Well, the one on the left, 1 23 through 108, we got, and that was 24 supposed to be your correspondence file</p>

<p>1 involving -- involving Tillery?  2 A. Yeah.  3 Q. And then subsequently I got  4 544, which is Bates page 109 through 115.  5 That's some more e-mails. And I'm just  6 curious how that came down.  7 A. So I think the first time I  8 was asked about this by the defense  9 attorneys I only searched according to my  10 inbox for Tillery.  11 Q. Yeah.  12 A. And the second time I was  13 more comprehensive, so I included my sent  14 items --  15 Q. Gotcha.  16 A. -- as well as my e-mails to  17 Shanna Swan.  18 Q. Okay.  19 A. So there were some e-mails I  20 think that were not included, based on my  21 sent items.  22 Q. Now. Here is my question.  23 If we look at the top of Exhibit 544, we  24 see Shanna Swan's name, Alexander</p>	<p>Page 570</p> <p>102.  2 MS. BROWN: What are these  3 numbers? What is 102?  4 MR. WATTS: That's the Bates  5 page number in the lower  6 right-hand corner.  7 MS. BROWN: Of what exhibit?  8 TRIAL TECH: 506.  9 MR. WATTS: Of Exhibit 506.  10 MS. BROWN: Mine's not  11 Bates'd.  12 BY MR. WATTS:  13 Q. Okay. Do you see on the  14 screen that in Bates Number 102, we have  15 the first entry on your billing records  16 of being December 15th?  17 A. Yes.  18 Q. And that is a half an hour  19 and a conversation with somebody at  20 Butler Snow. Who was the individual at  21 Butler Snow?  22 A. I believe it was David  23 Snow -- sorry, David Cohen.  24 Q. Okay. And that wasn't the</p>
<p>Page 571</p> <p>1 Kolevzon, Avi Reichenberg, David  2 Kristensen, and Ann Bauer.  3 Do you see that?  4 A. Yes.  5 Q. Are those all individuals  6 with whom you are familiar?  7 A. So I know Avi Reichenberg  8 and I know Shanna Swan. I don't know  9 David Kristensen other than paper, and I  10 never heard of Ann Bauer before this  11 case.  12 Q. Okay. Were you on calls  13 with those individuals during the fall of  14 2022?  15 A. So I had one 30-minute call,  16 and I'm certain that Shanna Swan was on  17 the call and Stephen Tillery was on the  18 call and Avi Reichenberg was on the call.  19 Q. Okay. And if we could, just  20 put down 544 and go to -- go to 506.  21 We'll go through it for just a second.  22 MR. WATTS: If you go back,  23 to about 108. Let's go to 107.  24 First bill. Yeah, right there.</p>	<p>Page 573</p> <p>1 first time that you spoke with Mr. Cohen  2 about this case, though?  3 A. No.  4 Q. How much earlier than  5 December 15 was the first time that you  6 spoke to Mr. Cohen?  7 A. I don't know exactly. It  8 was within -- I don't know exactly. I  9 don't want to guess.  10 Q. Well, was it in the month of  11 November?  12 MS. BROWN: Objection to the  13 form.  14 THE WITNESS: I think it was  15 in December, but I don't know.  16 BY MR. WATTS:  17 Q. So with respect to that  18 conversation --  19 A. Which conversation?  20 Q. The first conversation you  21 had with David Cohen at Butler Snow, it  22 was prior to December 15, 2022. We know  23 that, right?  24 A. Yes.</p>

1 Q. Best estimate as to how many  
 2 days prior to the first time where you  
 3 actually billed your time?  
 4 A. I don't want to guess.  
 5 Q. Well, a week?  
 6 A. I don't want to guess.  
 7 Q. Okay.  
 8 A. I can -- if we look at the  
 9 e-mail chain, I can sort of  
 10 back-calculate it, but...  
 11 Q. Yeah. Okay. Go to Bates  
 12 page number 100.  
 13 MS. BROWN: We need to find  
 14 a way to match this up with what  
 15 we have, because it's not matching  
 16 up.  
 17 MR. WATTS: Okay. Bates  
 18 page 100. At the top or at the  
 19 bottom -- let's go to 101, and  
 20 we'll come back to 100. You know  
 21 how with e-mails you have to work  
 22 backwards. So start with 101.  
 23 BY MR. WATTS:  
 24 Q. You see on November 30th,

1 Tillery says to all five of you experts,  
 2 "I'd appreciate having a call, WebEx, at  
 3 your convenience, to bring you up-to-date  
 4 and discuss next steps"?  
 5 A. Yes.  
 6 Q. That happens on  
 7 November 30th?  
 8 A. Yes.  
 9 Q. If we go to the top of the  
 10 screen, Ann Bauer responds, "I would be  
 11 happy to participate"; is that right?  
 12 A. Yes.  
 13 Q. Do you see that?  
 14 A. Yes.  
 15 Q. Now, we go to 100, Shanna  
 16 Swan says, "Me too," right?  
 17 A. Yep.  
 18 Q. And then on December 13th,  
 19 Steve Tillery asks for a time for a call  
 20 on WebEx, right?  
 21 A. Yes.  
 22 Q. And then on December 14th at  
 23 6:43 a.m., you say, "I'm going to bow  
 24 out, folks. Good luck with the case,"

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1 right?  
 2 A. Right. But there's an  
 3 e-mail in between where I also respond  
 4 that I can't participate.  
 5 Q. Okay. And my question is,  
 6 the e-mail in between -- and I want to  
 7 say it was December 1, but we'll find  
 8 it -- was that before or after you first  
 9 talked to the Butler Snow lawyer?  
 10 MS. BROWN: Objection.  
 11 Calls for speculation.  
 12 BY MR. WATTS:  
 13 Q. Go ahead.  
 14 A. So I believe it was before I  
 15 spoke to the attorney, because I was  
 16 involved in another case. And I remember  
 17 speaking to those attorneys, and that was  
 18 the impetus for backing out.  
 19 Q. Okay. The law firm  
 20 defending the baby food case in Galveston  
 21 was the one you talked to that was the  
 22 impetus for backing out with Tillery?  
 23 A. Correct.  
 24 Q. Yes?

1 A. Correct.  
 2 Q. Okay. And did you speak to  
 3 David Cohen at Butler Snow before or  
 4 after you talked to the law firm that was  
 5 defending the Galveston case?  
 6 MS. BROWN: Asked and  
 7 answered. Objection.  
 8 THE WITNESS: I think I  
 9 spoke to David Cohen after I spoke  
 10 to -- I think these two things  
 11 happened separate from each other,  
 12 and the conversation with David  
 13 happened afterwards.  
 14 BY MR. WATTS:  
 15 Q. Okay. So as I get the  
 16 sequence, you are talking with Tillery  
 17 and Bauer and Shanna Swan?  
 18 A. Just to clarify, no. We had  
 19 one 30-minute call, and then --  
 20 Q. I'm not going to take you  
 21 through 100 pages of e-mails. But I -- I  
 22 get it.  
 23 There was a discussion that  
 24 happened where you answered 11 questions

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<p>1 and --</p> <p>2 A. No, I didn't answer</p> <p>3 11 questions. There was a discussion for</p> <p>4 30 minutes. I don't remember the</p> <p>5 details.</p> <p>6 There were 11 questions on</p> <p>7 the agenda. I don't recall going through</p> <p>8 11 questions. Then there was some</p> <p>9 back-and-forth in e-mails. An attempt to</p> <p>10 schedule a subsequent meeting, and then</p> <p>11 at that point I had backed out.</p> <p>12 Q. And so at the time they were</p> <p>13 attempting to schedule a subsequent</p> <p>14 meeting, you have a conversation with the</p> <p>15 defense lawyer who is defending the</p> <p>16 Galveston autism case, right?</p> <p>17 A. Correct.</p> <p>18 Q. You identify that now maybe</p> <p>19 between the Galveston case and the</p> <p>20 acetaminophen case, you felt like you had</p> <p>21 a conflict?</p> <p>22 A. Yes. It was a potential</p> <p>23 conflict.</p> <p>24 Q. Okay. What was the nature</p>	<p>Page 578</p>	<p>1 e-mail prior to this, and I was still</p> <p>2 copied on these e-mails trying to</p> <p>3 schedule. So then I sent another e-mail</p> <p>4 to say, I'm going to have to bow out.</p> <p>5 Q. Okay. And then the next day</p> <p>6 you had your first conversation where you</p> <p>7 billed Butler Snow for work on behalf of</p> <p>8 the acetaminophen manufacturers in this</p> <p>9 case, right?</p> <p>10 A. Yes. I never saw myself as</p> <p>11 being retained by the plaintiffs'</p> <p>12 attorney. And at that point it was clear</p> <p>13 that I was going to be helping the</p> <p>14 defense attorneys.</p> <p>15 Q. Now, let me take you to</p> <p>16 Exhibit 525.</p> <p>17 (Document marked for</p> <p>18 identification as Exhibit</p> <p>19 Kolevzon 525.)</p> <p>20 BY MR. WATTS:</p> <p>21 Q. This is your billing file</p> <p>22 between 102 and 108. It's separate</p> <p>23 because -- it's part of your</p> <p>24 correspondence file, the other one, but I</p>	<p>Page 580</p>
<p>1 of that conflict that you felt you had?</p> <p>2 A. I think it was seen as</p> <p>3 problematic, potentially, to be on both</p> <p>4 defense and plaintiffs' side</p> <p>5 simultaneously in cases around exposures.</p> <p>6 Q. Okay. I'm sorry, what?</p> <p>7 A. In cases around exposures.</p> <p>8 Q. Okay. So then after you</p> <p>9 backed out, following talking with the</p> <p>10 defense firm in the Galveston baby food</p> <p>11 case, you get a call out of the blue from</p> <p>12 Butler Snow asking you to consult with</p> <p>13 them in this case?</p> <p>14 A. They didn't ask me to</p> <p>15 consult with them. They asked me if I</p> <p>16 would be interested in.</p> <p>17 We had an introductory</p> <p>18 conversation. At that point I still</p> <p>19 hadn't looked at the literature.</p> <p>20 Q. And at that point, after you</p> <p>21 spoke with Butler Snow, you sent the</p> <p>22 December 14th e-mail saying you're going</p> <p>23 to back -- bow out?</p> <p>24 A. So, again, there was an</p>	<p>Page 579</p>	<p>1 separated it.</p> <p>2 A. Yeah.</p> <p>3 Q. So here is my question. You</p> <p>4 had a 30-minute call on December 15th. A</p> <p>5 second 30-minute call on January 17th.</p> <p>6 Did no work in between, right?</p> <p>7 A. Sorry, say that again.</p> <p>8 Q. Yeah.</p> <p>9 You had one call on</p> <p>10 December 15th for a half an hour, a</p> <p>11 second call on January 17th for a half an</p> <p>12 hour, and billed for no work in between,</p> <p>13 right?</p> <p>14 A. Well, I billed for no work</p> <p>15 in between. Obviously, I did no work,</p> <p>16 but I billed for no work, so, yeah.</p> <p>17 Q. That's my point.</p> <p>18 Let's go to the next page.</p> <p>19 The next thing that you do</p> <p>20 is on January 21st, you start preparing a</p> <p>21 report on changing prevalence rates.</p> <p>22 Do you see that?</p> <p>23 A. Yeah. Yes.</p> <p>24 Q. And then on the 22nd, you</p>	<p>Page 581</p>

<p>1 start preparing a report on changing 2 prevalence rates, correct? 3 A. Yes. 4 Q. So a total of four hours and 5 75 minutes. 6 A. Four hours and 45 minutes. 7 Q. I'm sorry, 4.75 hours, 8 right? 9 Are you a football fan? 10 A. Do I have to answer? 11 Q. Yeah. Giants or Jets, which 12 is it? 13 A. If I had to choose, I would 14 go with the Giants. 15 Q. Okay. You know the Giants 16 were playing on the 21st in the playoffs 17 against the Eagles, right? 18 A. I can't confirm or deny. 19 Q. Did you watch them get 20 killed by the Eagles 38 to 7 while you 21 were working on your prevalence report? 22 A. I definitely was not 23 watching the game. 24 Q. Okay. Well, you didn't miss</p>	<p>Page 582</p>	<p>1 half an hour call with Butler Snow, is to 2 write a report on changing prevalence 3 rates, right? 4 A. So I was asked my 5 opinions -- because that literature I had 6 already reviewed. And I was asked my 7 opinions on the changing prevalence 8 rates, which I discussed, and then I was 9 asked to provide some overview of those 10 opinions in writing. 11 Q. And that's where you gave 12 them the citation to Croen in 2002, 13 right? 14 MS. BROWN: Objection to the 15 form. 16 THE WITNESS: I don't know. 17 And I don't remember when I first 18 provided that citation. 19 BY MR. WATTS: 20 Q. Do you think if the football 21 games hadn't been on, you might have 22 spotted the 2003 Blaxill or 2003 Croen 23 response? 24 MS. BROWN: Objection to the</p>	<p>Page 584</p>
<p>1 anything, so there you go. 2 During the call on the 17th, 3 did they ask you to write a report about 4 changing prevalence rates? 5 A. During the call on the 17th 6 of -- sorry. Can we go back? 7 Q. Call on the 17th, right 8 there. Half an hour. You haven't done 9 anything for a month. You have a call 10 with Butler Snow for a half an hour and 11 then you start working on a changing 12 prevalence rate while the football games 13 are on, right?</p>	<p>Page 583</p>	<p>1 form. 2 THE WITNESS: I'm not sure 3 how we can answer that question. 4 BY MR. WATTS: 5 Q. Let's see if we can just do 6 one last thing and then we'll call this a 7 day, okay? 8 A. Okay. 9 Q. If you would go to 10 Document 404, which is your materials 11 considered list. 12 (Whereupon, a discussion was 13 held off the record.)</p>	<p>Page 585</p>
<p>14 MS. BROWN: And I'm just 15 going to object to the 16 conversation on the 17th. It's 17 been redacted for work product 18 privilege. And so I'm going to 19 instruct you not to answer what is 20 underneath the redaction.</p>		<p>14 BY MR. WATTS: 15 Q. I'm going to hand you my 16 copy of 404. 17 And what I need to know is, 18 of the documents that you listed as your 19 materials referred to, if you would take 20 my blue pen and put a check next to each 21 of them that you consider them to be a 22 reliable authority.</p>	
<p>21 BY MR. WATTS: 22 Q. That's fair. That's fair. 23 The first thing that you 24 chose to do, as it happens, right after a</p>		<p>23 MS. BROWN: I'm going to 24 object to this as improper</p>	

<p>1 instruction for the witness. And 2 it's an impossible task to be done 3 in the remaining time.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. I'll tell you what. Are 6 there any authorities that you reference 7 that you consider not to be reliable?</p> <p>8 MS. BROWN: On materials 9 referenced?</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Sir?</p> <p>12 A. I mean, I considered all 13 these papers. In terms of the findings, 14 I'd have to go through each and every one 15 of them to determine whether they -- I 16 consider them to be reliable --</p> <p>17 Q. Right. That's what I meant.</p> <p>18 A. -- on the basis of their 19 design and methods and results.</p> <p>20 Q. Which ones did you find to 21 be reliable? And just put a check next 22 to the ones that you found reliable.</p> <p>23 MS. BROWN: Object to the 24 form of the question.</p>	<p>Page 586</p> <p>1 the actual papers to make sure 2 that I'm being thoughtful and 3 comprehensive in my answer.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. What's today's date, 6 September 1st?</p> <p>7 A. No -- oh, yeah.</p> <p>8 September 1st.</p> <p>9 Q. Okay. I'll be asking you 10 that question again. So if you want to 11 think about that between now and the next 12 time that we see each other, I think that 13 would be a good thing for you to do.</p> <p>14 Okay?</p> <p>15 A. Can you clarify the 16 question.</p> <p>17 Q. Sure.</p> <p>18 MS. BROWN: There's no 19 question. Don't worry about it. 20 We'll look forward to seeing you.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. There is very much a 23 question that you're refusing to do, and 24 that's okay.</p>
<p>1 What part reliable?</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Go ahead, sir. Just put a 4 check on the ones that you think are 5 reliable.</p> <p>6 THE VIDEOGRAPHER: Just grab 7 your microphone.</p> <p>8 THE WITNESS: We'd have to 9 go to the actual papers and make 10 sure that I'm looking at all the 11 papers, and then we can do that 12 exercise.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. Do you have any in 15 here that you consider to be not 16 reliable?</p> <p>17 MS. BROWN: Same.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Just off the top -- top of 20 your head?</p> <p>21 MS. BROWN: Same objection.</p> <p>22 THE WITNESS: You know, I 23 don't want to respond off the top 24 of my head. I'd rather look at</p>	<p>Page 587</p> <p>1 But the question is, I would 2 like to know which of the materials 3 you've considered, you consider to be 4 reliable authorities.</p> <p>5 A. I'm not refusing --</p> <p>6 MS. BROWN: Okay. And to be 7 fair -- hold on. Hold on.</p> <p>8 He's not refusing. This is 9 how you chose to spend your time 10 today. He asked to be able to 11 complete the task you've asked of 12 him, to have each one of these 13 studies so he can reliably go 14 through them and answer your 15 question.</p> <p>16 MR. WATTS: Okay.</p> <p>17 MS. BROWN: We don't have 18 time for that.</p> <p>19 MR. WATTS: Well, that's not 20 my problem.</p> <p>21 MS. BROWN: But I think it 22 is, because it's your time.</p> <p>23 MR. WATTS: Alli, you're not 24 the judge. Now let me take my</p>

<p>1 deposition, okay?</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Now, my question is, which</p> <p>4 of these are reliable authorities. And</p> <p>5 if you'd like to answer it, fill it in</p> <p>6 before you sign your deposition, I'm</p> <p>7 happy to do that.</p> <p>8 I'm making the request. I</p> <p>9 want a list of these materials considered</p> <p>10 that you consider to be reliable</p> <p>11 authorities, okay?</p> <p>12 MS. BROWN: I object. He's</p> <p>13 not going to do that. He's</p> <p>14 already answered that question.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Go ahead.</p> <p>17 A. So my answer is that I'm</p> <p>18 happy to do that.</p> <p>19 Q. Okay.</p> <p>20 A. However, I can't do that on</p> <p>21 the basis of titles. I need to do it on</p> <p>22 the basis of the actual articles. And</p> <p>23 there are, you know, 20 pages in here.</p> <p>24 Q. Yep.</p>	Page 590	<p>1 MR. WATTS: Objection to</p> <p>2 form. My goodness.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. What's a business address</p> <p>5 and phone number that you can be reached</p> <p>6 at for purposes of identifying you on the</p> <p>7 record?</p> <p>8 MS. BROWN: He's a retained</p> <p>9 expert. If you need to reach him,</p> <p>10 you call us.</p> <p>11 THE WITNESS: I was going to</p> <p>12 say that.</p> <p>13 MR. WATTS: Okay. So I'll</p> <p>14 list the business address of</p> <p>15 Skadden Arps?</p> <p>16 MS. BROWN: Please do.</p> <p>17 MR. WATTS: That's fine.</p> <p>18 Okay. Those are all my</p> <p>19 questions. Thank you.</p> <p>20 MS. BROWN: I'm going to</p> <p>21 have a few questions, but can we</p> <p>22 take ten minutes, please.</p> <p>23 THE VIDEOGRAPHER: The time</p> <p>24 right now is 5:01 p.m. We are off</p>	Page 592
<p>1 A. So we'd have to go through</p> <p>2 each article, look at the methods, look</p> <p>3 at the rigor, look at the design, look at</p> <p>4 all the elements of it, and then I can</p> <p>5 try to answer that question.</p> <p>6 Q. Okay. Great. Well, that's</p> <p>7 my request. And if you want to comply</p> <p>8 with it before you read and sign your</p> <p>9 deposition, you can. If you choose not</p> <p>10 to, whatever the repercussions are of</p> <p>11 that, that'll be fine.</p> <p>12 MS. BROWN: There's no</p> <p>13 repercussions. I object to the</p> <p>14 instruction.</p> <p>15 MR. WATTS: Judge, Judge,</p> <p>16 come on.</p> <p>17 MS. BROWN: That's improper.</p> <p>18 Are you threatening him with</p> <p>19 repercussions? It sounded like a</p> <p>20 threat. It's outrageous.</p> <p>21 MR. WATTS: It sounds like</p> <p>22 coaching.</p> <p>23 THE WITNESS: I thought we</p> <p>24 were done.</p>	Page 591	<p>1 the record.</p> <p>2 (Short break.)</p> <p>3 THE VIDEOGRAPHER: The time</p> <p>4 right now is 5:11 p.m. We're back</p> <p>5 on the record.</p> <p>6 - - -</p> <p>7 EXAMINATION</p> <p>8 - - -</p> <p>9 BY MS. BROWN:</p> <p>10 Q. Welcome back, Dr. Kolevzon.</p> <p>11 How are you doing?</p> <p>12 A. I'm good, thanks, Alli.</p> <p>13 Q. Okay. Just a couple of</p> <p>14 quick questions for you at the end of the</p> <p>15 day here.</p> <p>16 We started this morning</p> <p>17 talking about institutions and doctors</p> <p>18 you may know from different institutions.</p> <p>19 Do you remember those questions?</p> <p>20 A. I do.</p> <p>21 Q. And one of the things</p> <p>22 counsel was asking you about was things</p> <p>23 like, do you think Harvard is a good and</p> <p>24 respectable school, right?</p>	Page 593

<p>1 A. Right.</p> <p>2 Q. And you agreed, of course,</p> <p>3 that Harvard and Yale and Mount Sinai,</p> <p>4 these are respectable institutions,</p> <p>5 correct?</p> <p>6 A. Correct.</p> <p>7 Q. And you were asked a number</p> <p>8 of questions about doctors that you may</p> <p>9 know and you may have written with or</p> <p>10 presented with or worked with over the</p> <p>11 years, correct?</p> <p>12 A. Correct.</p> <p>13 Q. And many of those doctors</p> <p>14 you believed to be good doctors, correct?</p> <p>15 A. Correct.</p> <p>16 Q. But, Dr. Kolevzon, I want to</p> <p>17 ask you about whether it is reasonable</p> <p>18 for doctors to have the opinion, based on</p> <p>19 the current scientific literature, that</p> <p>20 acetaminophen causes autism?</p> <p>21 A. I don't think that the</p> <p>22 scientific literature supports an</p> <p>23 association between acetaminophen and</p> <p>24 autism, and it certainly doesn't support</p>	<p>Page 594</p> <p>1 Harvard Medical School.</p> <p>2 Do you recall some questions</p> <p>3 about this?</p> <p>4 A. Vaguely, yes.</p> <p>5 Q. Okay. And do you recall,</p> <p>6 actually, a lot of questions about just</p> <p>7 headlines and press releases and</p> <p>8 sentences and articles you weren't</p> <p>9 familiar with?</p> <p>10 MR. WATTS: Objection.</p> <p>11 Leading.</p> <p>12 THE WITNESS: I was asked to</p> <p>13 confirm that what was written on</p> <p>14 the page was in fact written on</p> <p>15 the page.</p> <p>16 But, yes, they were from</p> <p>17 various press releases.</p> <p>18 BY MS. BROWN:</p> <p>19 Q. And is it important, though,</p> <p>20 when you're evaluating any kind of</p> <p>21 document, to actually read what the words</p> <p>22 in the document say?</p> <p>23 A. Yes. I think in order to</p> <p>24 evaluate what the document is saying, you</p>
<p>1 a causal one.</p> <p>2 Q. And so is it possible,</p> <p>3 though, for reasonable scientists to</p> <p>4 disagree on the question of whether</p> <p>5 acetaminophen causes autism?</p> <p>6 A. I think any reasonable</p> <p>7 scientist that would evaluate the</p> <p>8 literature would come to the same</p> <p>9 conclusion, so I think, in this</p> <p>10 particular case, it's not possible or it</p> <p>11 shouldn't be possible for a reasonable</p> <p>12 scientist to disagree.</p> <p>13 Q. And you were shown, in</p> <p>14 connection with that line of questioning,</p> <p>15 you were shown a number of press releases</p> <p>16 and articles discussing whether or not</p> <p>17 there could be an association between</p> <p>18 acetaminophen and autism. Do you recall</p> <p>19 some of those?</p> <p>20 A. Yes.</p> <p>21 Q. Okay. And I want to show</p> <p>22 you and ask you some questions about</p> <p>23 Exhibit 560, which was this 2021 printout</p> <p>24 from a women's health section of the</p>	<p>Page 595</p> <p>1 need to understand the source and the</p> <p>2 methods used to determine the</p> <p>3 conclusions.</p> <p>4 Q. And so, for example,</p> <p>5 Exhibit 560's title, "Is a Common Pain</p> <p>6 Reliever Safe During Pregnancy?"</p> <p>7 And let's just look briefly</p> <p>8 at what the article actually says.</p> <p>9 Would you read for us,</p> <p>10 Doctor, the last two sentences of this</p> <p>11 press release that you were asked about</p> <p>12 the title of?</p> <p>13 A. "While the issue they raise</p> <p>14 is important, it's worth noting that the</p> <p>15 concerns come from studies done in</p> <p>16 animals and human observational studies.</p> <p>17 These type of studies cannot prove that</p> <p>18 acetaminophen is the actual cause of any</p> <p>19 of these problems."</p> <p>20 Q. And, Doctor, on the very</p> <p>21 next page of the Harvard press release,</p> <p>22 what does it say about the research on</p> <p>23 this topic?</p> <p>24 A. It says the research on this</p>
	Page 597

<p>1 topic is not conclusive.</p> <p>2 Q. And is that consistent with</p> <p>3 your review of the literature?</p> <p>4 A. It is.</p> <p>5 Q. Okay. And what does it say</p> <p>6 in terms of whether or not this is an</p> <p>7 area where a causal association has been</p> <p>8 proven?</p> <p>9 A. It says that more research</p> <p>10 is needed to confirm that this medicine</p> <p>11 is truly causing health problems, and to</p> <p>12 determine at what doses and at what</p> <p>13 points during the pregnancy exposure to</p> <p>14 acetaminophen might be most harmful.</p> <p>15 Q. And was one of the sensible</p> <p>16 steps that the Harvard folks actually</p> <p>17 suggest pregnant moms do when considering</p> <p>18 whether or not to take acetaminophen</p> <p>19 during pregnancy?</p> <p>20 A. It looks like they are</p> <p>21 recommending to consult with your doctor.</p> <p>22 Q. Okay. And what is the</p> <p>23 concluding sentence, Doctor, of this</p> <p>24 Harvard press release as it relates to</p>	<p>Page 598</p>	<p>1 acetaminophen.</p> <p>2 But, in fact, this document</p> <p>3 doesn't say a word about acetaminophen,</p> <p>4 right?</p> <p>5 A. Right.</p> <p>6 Q. Okay. And what he did point</p> <p>7 you to is a section about causes, right?</p> <p>8 A. Yes.</p> <p>9 Q. The exact cause of autism</p> <p>10 isn't known; do you agree with that?</p> <p>11 A. Other than genetics.</p> <p>12 Q. Okay. Certain medicines</p> <p>13 taken during pregnancy may also lead to</p> <p>14 ASD in the child.</p> <p>15 You talked to us about a</p> <p>16 study showing an association with</p> <p>17 valproic acid, correct?</p> <p>18 A. Yes.</p> <p>19 Q. And do you believe that</p> <p>20 there have been some studies showing a</p> <p>21 potential association?</p> <p>22 A. Yes.</p> <p>23 Q. Does this page of Mount</p> <p>24 Sinai's website say anything about</p>	<p>Page 600</p>
<p>1 that advice to pregnant moms?</p> <p>2 A. That assuming it's advised</p> <p>3 by your doctor, that the benefits</p> <p>4 outweigh the risks.</p> <p>5 Q. Okay. You were asked some</p> <p>6 questions about the Mount Sinai website</p> <p>7 at Exhibit 520, and I just want to make</p> <p>8 sure that I understood your testimony and</p> <p>9 it's consistent.</p> <p>10 Counsel asked you if you</p> <p>11 agreed with what Mount Sinai said on</p> <p>12 their website about acetaminophen.</p> <p>13 Do you recall that question?</p> <p>14 A. I do.</p> <p>15 Q. Okay. Did Exhibit 520 that</p> <p>16 counsel showed you, titled, "Autism</p> <p>17 Spectrum Disorder," does it say anything</p> <p>18 about acetaminophen?</p> <p>19 A. Not to my knowledge.</p> <p>20 Q. Okay. And so he mentioned</p> <p>21 that this had been recently printed off</p> <p>22 of the Mount Sinai website. And there</p> <p>23 were some questions about whether you</p> <p>24 support what Mount Sinai says about</p>	<p>Page 599</p>	<p>1 acetaminophen causing autism?</p> <p>2 A. Not that I'm aware of.</p> <p>3 Q. Okay. You were asked a lot</p> <p>4 of questions, Dr. Kolevzon, throughout</p> <p>5 the day about a recent edition of a book</p> <p>6 chapter you wrote years ago that we have</p> <p>7 as Exhibit 494.</p> <p>8 Do you recall that series of</p> <p>9 questions?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. And when counsel was</p> <p>12 asking you about the questions, he</p> <p>13 referred to a -- what he termed to be a</p> <p>14 very recent edition of this book,</p> <p>15 correct?</p> <p>16 A. Correct.</p> <p>17 Q. And, in fact, this book, the</p> <p>18 addition that we have at 494, came out</p> <p>19 just within the last couple of years,</p> <p>20 correct?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. I want to show you</p> <p>23 some -- and I understand you didn't write</p> <p>24 this section, right?</p>	<p>Page 601</p>

<p>1       A. No.</p> <p>2       Q. Okay. Nevertheless, I want</p> <p>3 to show you some sections of this</p> <p>4 chapter, though, that counsel didn't show</p> <p>5 you and see if you agree with them.</p> <p>6       First chapter of the</p> <p>7 paragraph says, "Caution against</p> <p>8 inappropriately causing the public to</p> <p>9 blame mothers for their child's condition</p> <p>10 is sometimes warranted in studies on</p> <p>11 associations in which a mother's agency</p> <p>12 is involved, such as the case of maternal</p> <p>13 antidepressant use during pregnancy."</p> <p>14       Do you see that?</p> <p>15       A. Yes.</p> <p>16       Q. What does that mean to you,</p> <p>17 Doctor?</p> <p>18       A. It means going back to the</p> <p>19 history of autism, people would blame</p> <p>20 mothers for their child's autism, and I</p> <p>21 think that's quite dangerous, especially</p> <p>22 as those theories have mostly been</p> <p>23 disproven.</p> <p>24       And when a mother who is</p>	<p>Page 602</p> <p>1       Would you read that final</p> <p>2 sentence for us there, Doctor.</p> <p>3       A. "We present plausible</p> <p>4 biological mechanisms linking those risk</p> <p>5 factors to ASD and suggest some</p> <p>6 directions for future research."</p> <p>7       Q. And what does "suggest</p> <p>8 future directions for future research"</p> <p>9 mean to you, Doctor?</p> <p>10       A. It means that all these</p> <p>11 biological mechanisms that are proposed</p> <p>12 are hypothesis driven, and that's why</p> <p>13 it's important to do future research, to</p> <p>14 try to actually establish them as</p> <p>15 plausible.</p> <p>16       Q. And is that consistent with</p> <p>17 your review of the literature, Doctor?</p> <p>18       A. It is.</p> <p>19       Q. Okay. And then I don't</p> <p>20 think we had a chance to actually look at</p> <p>21 what other authors said about</p> <p>22 acetaminophen. I want to ask you about</p> <p>23 that.</p> <p>24       This short paragraph says,</p>
<p>Page 603</p> <p>1       depressed takes an SSRI and passes on</p> <p>2 increased risk by virtue of their genetic</p> <p>3 susceptibility and tries to treat the</p> <p>4 depression and you blame the mother for</p> <p>5 taking the SSRI, that's potentially very</p> <p>6 damaging.</p> <p>7       Q. This very recent chapter</p> <p>8 that you didn't write says on the next</p> <p>9 page, "Despite significant research into</p> <p>10 the association between conditions and</p> <p>11 complications of pregnancy and birth and</p> <p>12 autism spectrum disorder, the causal</p> <p>13 nature of these associations is still in</p> <p>14 question."</p> <p>15       Do you agree with that?</p> <p>16       A. Yes. I think that there are</p> <p>17 some associations that have been reliably</p> <p>18 shown, but the strength and consistency</p> <p>19 would not lead one to conclude that they</p> <p>20 are causal in nature.</p> <p>21       Q. Okay. And you were pointed</p> <p>22 out this sentence on the next page about</p> <p>23 mechanisms, but I don't think the</p> <p>24 complete sentence was read.</p>	<p>Page 605</p> <p>1       "It's also been suggested that</p> <p>2 acetaminophen increases the risk for</p> <p>3 autism spectrum disorder by causing</p> <p>4 neuronal oxidative stress. Only one</p> <p>5 meta-analysis has been published focusing</p> <p>6 on this association, and considering the</p> <p>7 susceptibility of individual</p> <p>8 observational studies to several biases,</p> <p>9 mostly confounding by indication, this</p> <p>10 association awaits further elucidation."</p> <p>11       What does that mean, Doctor?</p> <p>12       A. So, again, I didn't write</p> <p>13 this. But the person who did was able to</p> <p>14 review the literature at the time.</p> <p>15 Things have evolved since then, but I</p> <p>16 think they included one meta-analysis by</p> <p>17 Masarwa. And I think within that</p> <p>18 meta-analysis there were six or so</p> <p>19 studies included, only one of which used</p> <p>20 autism as an outcome.</p> <p>21       And the kind of combined</p> <p>22 among all those studies odds ratio was</p> <p>23 something like 1.19. And so on that</p> <p>24 basis they are saying there is a possible</p>

<p>1 association.</p> <p>2 But because of the</p> <p>3 inconsistency across studies, a lot more</p> <p>4 work needs to be done to -- to establish</p> <p>5 that. And, actually, since then,</p> <p>6 multiple studies have examined this, and</p> <p>7 most have been negative.</p> <p>8 Q. And anywhere in this short</p> <p>9 paragraph on acetaminophen, do these</p> <p>10 authors conclude that maternal use of</p> <p>11 acetaminophen is a cause of autism?</p> <p>12 A. No, certainly not.</p> <p>13 Q. Okay. And then, finally,</p> <p>14 Doctor, at the very end of this chapter,</p> <p>15 there is some conclusions and future</p> <p>16 directions.</p> <p>17 Do you see that?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And I think we talked</p> <p>20 about some of these highlights. But</p> <p>21 let's just look at the very first</p> <p>22 unhighlighted sentence fragment.</p> <p>23 "Although the etiology of</p> <p>24 autism remains largely unknown."</p>	Page 606	<p>1 the kind of clinical features or</p> <p>2 the phenotype that we see as being</p> <p>3 driven by genetics.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. And how does that relate to</p> <p>6 the 20 percent or less of genes we've</p> <p>7 actually identified that you spoke about</p> <p>8 today?</p> <p>9 A. Right. So 20 years ago we</p> <p>10 were able to identify 1 percent,</p> <p>11 2 percent. Today we're able to identify</p> <p>12 20 percent or even 30 percent.</p> <p>13 What that means is that</p> <p>14 despite it being 80 to 90 percent genetic</p> <p>15 in origin, if you do a genetic test on a</p> <p>16 population of 100 kids, you're only going</p> <p>17 to find a specific gene in 20 to</p> <p>18 30 percent. And that reflects the</p> <p>19 limitations in both the technology, our</p> <p>20 analytic methods, and just the state of</p> <p>21 the knowledge.</p> <p>22 Q. And because we don't know</p> <p>23 what the genes are, does that mean that</p> <p>24 there's only a genetic cause or a genetic</p>	Page 608
<p>1 Do you agree with that?</p> <p>2 A. I think, other than genetics</p> <p>3 sort of en masse, it is largely unknown.</p> <p>4 And I think we still have many, many,</p> <p>5 many genes, even thousands, that we have</p> <p>6 yet to identify.</p> <p>7 Q. Now I want to ask you a</p> <p>8 couple of follow-up questions, actually,</p> <p>9 about that.</p> <p>10 We talked a little bit about</p> <p>11 genetics today, and I thought I heard you</p> <p>12 use the percentage 70 to 80 percent of</p> <p>13 autism may be caused by genetics.</p> <p>14 Was that your testimony?</p> <p>15 MR. WATTS: Objection.</p> <p>16 Form.</p>	Page 607	<p>1 factor in 20 percent of those cases?</p> <p>2 A. No. Decades and decades of</p> <p>3 literature, especially in twins, shows</p> <p>4 quite convincingly that 80 to 90 percent</p> <p>5 of autism is genetically driven.</p> <p>6 Q. And, in fact, one of the</p> <p>7 things the folks who wrote this book</p> <p>8 chapter that we spent a lot of time on</p> <p>9 here today wrote was that "perhaps the</p> <p>10 most important potential confounder to</p> <p>11 consider is genetic susceptibility to ASD</p> <p>12 which may be associated with obstetrical</p> <p>13 suboptimality."</p> <p>14 What does that mean?</p> <p>15 A. So in this particular case,</p> <p>16 it means that the child may be at</p> <p>17 increased risk for autism based on in</p> <p>18 uterine conditions. Based on, you know,</p> <p>19 speculatively, stress of the mother. And</p> <p>20 it's for that reason that they are taking</p> <p>21 Tylenol or acetaminophen.</p> <p>22 And it's not that the</p> <p>23 acetaminophen is causing the autism, it's</p> <p>24 the obstetric conditions that are causing</p>	Page 609
<p>17 THE WITNESS: So we were</p> <p>18 talking about the heritability of</p> <p>19 autism, and I think, generally</p> <p>20 speaking, it's accepted to be</p> <p>21 about 80 percent, even perhaps</p> <p>22 more. I think in my report I said</p> <p>23 70 to 90. So estimates range.</p> <p>24 But that is the amount of</p>			

<p>1 the autism or some other genetic  2 confounding.  3 There are studies that  4 suggest that there are sort of genetic  5 reasons why mothers might take Tylenol,  6 and those same genetic reasons may drive  7 the autism diagnosis.</p> <p>8 Q. You were shown a Exhibit 545  9 today, which was a blank chart titled,  10 "Kolevzon's Explanation for Rising  11 Prevalence Rates of ASD."</p> <p>12 Do you remember this chart?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. And counsel started  15 to fill in, in red, some dates.</p> <p>16 A. Yes.</p> <p>17 Q. Do you recall that?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And based on your  20 20-plus years of experience and your  21 review of the scientific literature, are  22 those dates reflective of the time period  23 for which these explanations apply?</p> <p>24 A. No. I think I mentioned</p>	<p>Page 610</p>	<p>1 up until today.  2 It's the last prevalence  3 rate that was estimated by the CDC is 1  4 out of 36 children has autism. And if  5 that's because of some, as of yet,  6 unknown environmental factor, it would be  7 absolutely shocking.</p> <p>8 Q. And, in fact -- and we'll  9 mark this as Defense-1 and provide it to  10 your deposition.</p> <p>11 (Document marked for  12 identification as Kolevzon Defense  13 Exhibit 1.)</p> <p>14 BY MS. BROWN:</p> <p>15 Q. In fact, along those lines,  16 if we just take a quick peek back at 520,  17 that Mount Sinai website that counsel  18 showed you. Mount Sinai says, "The  19 increase in children with ASD may be due  20 to better diagnosis and newer definitions  21 of ASD. Autism spectrum disorder now  22 includes syndromes that used to be  23 regarded as separate disorders."</p> <p>24 Is that part of what you</p>	<p>Page 612</p>
<p>1 that these explanations reflect dynamic  2 changes over the last, in some cases,  3 40 years that have kind of iteratively  4 affected prevalence rates.</p> <p>5 So even though a certain  6 mandate occurred in 2007, that doesn't  7 mean that it only affected prevalence in  8 2007, because it affected prevalence from  9 2007 until today, for example.</p> <p>10 Q. And so if you wanted to  11 accurately put a date through which these  12 explanations were continuing to influence  13 rising prevalence rates of autism, what  14 date would you put?</p> <p>15 A. Today.</p> <p>16 Q. Today for all of these,  17 correct?</p> <p>18 A. Well, every year that the  19 CDC has monitored rates, it's gone up and  20 up and up. So if the explanation, as  21 I've proposed it or as it's been proposed  22 by many, many, many people, and commonly  23 accepted in the scientific community, you  24 would see these -- the continued impact</p>	<p>Page 611</p>	<p>1 were talking about regarding the  2 prevalence rates, Doctor?</p> <p>3 A. Yes. And Mount Sinai  4 doesn't say that. I would say it's the  5 consensus in the scientific community  6 that these are the factors that have led,  7 for the most part, to the increase in  8 prevalence.</p> <p>9 Q. But as it relates to these  10 factors, you say the consensus in the  11 scientific community, you were shown bits  12 and pieces of a bunch of other articles  13 talking about DSM-V and whether or not  14 that influenced prevalence rates in the  15 way you describe it. Help us understand  16 that.</p> <p>17 A. So in science you have  18 conflicting findings. But the totality  19 of the literature, the totality of the  20 evidence and certainly the consensus  21 among scientists is that this is mainly  22 artifactual.</p> <p>23 Q. A few quick questions on the  24 e-mails that counsel was asking you about</p>	<p>Page 613</p>

<p style="text-align: right;">Page 614</p> <p>1 at the very end of your deposition.    2 Is it accurate that you were    3 actually approached by the plaintiffs in    4 this litigation at one point?    5 MR. WATTS: Objection.    6 Form.    7 THE WITNESS: Correct.    8 BY MS. BROWN:    9 Q. Okay. And did you    10 understand -- did you tell the lawyers    11 representing the plaintiffs in this    12 litigation that you believed    13 acetaminophen could cause autism?    14 A. No. I told them that I was    15 willing to investigate the literature, to    16 help answer that question.    17 Q. Did you tell the lawyers    18 representing the plaintiffs in this    19 litigation that you ever formed the    20 opinion that supports their litigation    21 theory that maternal use of acetaminophen    22 can cause autism?    23 A. No. In fact, as I recall, I    24 told them that my previous investigation</p>	<p style="text-align: right;">Page 616</p> <p>1 important to reveal and be transparent    2 about potential conflicts of interest,    3 which is what we do. Obviously,    4 everybody comes to science with some    5 biases that they have to be aware of.    6 But by no means is my    7 science dictated, determined, or    8 influenced by the funder. Or at least    9 not the outcomes. Maybe the nature of    10 the experiment can depend on certain    11 priorities, but the outcomes are    12 dependent on the data.    13 MS. BROWN: Dr. Kolevzon,    14 that's all I have for you. Thanks    15 so much for your time.    16 MR. WATTS: A little bit    17 more.    18 - - -    19 EXAMINATION    20 - - -    21 BY MR. WATTS:    22 Q. Ready.    23 Dr. Kolevzon, counsel for    24 the acetaminophen manufacturers asked you</p>
<p style="text-align: right;">Page 615</p> <p>1 of another exposure determined that, in    2 fact, the exposure was not causal.    3 Q. Were you ever retained by    4 the lawyers representing the plaintiffs    5 in this litigation?    6 A. No. As I recall, an e-mail    7 was sent saying that they would send a    8 retention letter. I never received a    9 retention letter, and I didn't assume to    10 be retained by them.    11 Q. Is your opinion based on who    12 is hiring you?    13 A. Absolutely not. My opinion    14 is based on my evaluation of literature,    15 which is based on my experience    16 scientifically and clinically.    17 Q. And similar to that you were    18 asked a lot of questions about funding of    19 scientific research and scientific    20 articles.    21 Are the results or the    22 efforts of your scientific endeavors    23 determined by who is funding them?    24 A. No. I think it's always</p>	<p style="text-align: right;">Page 617</p> <p>1 about my questions concerning respectable    2 institutions, Harvard, Yale, Johns    3 Hopkins; you recall that, right?    4 A. Yes.    5 Q. Then you said that you don't    6 think that any reasonable science could    7 disagree with you, right?    8 A. No. What I said is in the    9 case of, specifically, acetaminophen    10 causing autism, looking at the literature    11 as it stands, I don't think a reasonable    12 scientist could conclude that it causes    13 autism.    14 Q. Now, she pointed you to 520,    15 which was a Mount Sinai press release    16 that didn't mention acetaminophen, but    17 she didn't mention Exhibit 466.    18 MR. WATTS: Put that up.    19 (Document marked for    20 identification as Exhibit    21 Kolevzon 466.)    22 BY MR. WATTS:    23 Q. This is a Mount Sinai press    24 release that does mention acetaminophen,</p>

<p>1 right?</p> <p>2 MS. BROWN: Objection.</p> <p>3 Misstates the document.</p> <p>4 THE WITNESS: This is --</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Is it a Mount Sinai press</p> <p>7 release?</p> <p>8 MS. BROWN: Same objection.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Yes?</p> <p>11 A. Yes. We'd have to look at</p> <p>12 the study, which is not --</p> <p>13 Q. Is it titled, "Acetaminophen</p> <p>14 Use"?</p> <p>15 The first word of the whole</p> <p>16 article is the first word of the title</p> <p>17 that mentions acetaminophen, right?</p> <p>18 A. So this is a different web</p> <p>19 page, sponsored by a different site and</p> <p>20 has nothing to do with autism.</p> <p>21 Q. This document has nothing to</p> <p>22 do with autism?</p> <p>23 A. The study that the document</p> <p>24 is based on is language delay in girls.</p>	<p>Page 618</p>	<p>1 "New data suggests the use of</p> <p>2 acetaminophen poses a risk for pregnant</p> <p>3 women," right?</p> <p>4 A. I don't think that's a</p> <p>5 reasonable conclusion to draw based on</p> <p>6 the evidence.</p> <p>7 Q. But it's a conclusion by</p> <p>8 reasonable scientists, right?</p> <p>9 MS. BROWN: Objection.</p> <p>10 Misstates testimony.</p> <p>11 THE WITNESS: I think if a</p> <p>12 reasonable scientist in this case</p> <p>13 evaluated the totality of the</p> <p>14 literature, they would not draw</p> <p>15 that conclusion.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. And if we look at the</p> <p>18 consensus statement in 561, it was</p> <p>19 written in part by an Icahn scientist,</p> <p>20 Shanna Swan, right?</p> <p>21 MS. BROWN: Objection to the</p> <p>22 form.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Yes?</p>	<p>Page 620</p>
<p>1 Q. So with respect to</p> <p>2 acetaminophen, 466 mentions</p> <p>3 acetaminophen, and it has a quote from</p> <p>4 Shanna Swan of the Icahn School, right?</p> <p>5 MR. WATTS: Second page.</p> <p>6 THE WITNESS: Okay.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. And Carl-Gustaf Bornehag, a</p> <p>9 professor at Karlstad University and</p> <p>10 adjunct professor at the Icahn School.</p> <p>11 MR. WATTS: Take that down.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. There's Shanna Swan, and</p> <p>14 then right below that is Carl-Gustaf</p> <p>15 Bornehag, right?</p> <p>16 A. So I'm familiar with the</p> <p>17 study.</p> <p>18 Q. Okay.</p> <p>19 A. This is a study that has</p> <p>20 nothing to do with autism.</p> <p>21 Q. So Shanna Swan, Mount Sinai,</p> <p>22 says, "Pregnant women should limit their</p> <p>23 use of this analgesic during pregnancy."</p> <p>24 And the adjunct professor at Icahn says,</p>	<p>Page 619</p>	<p>1 A. Yes.</p> <p>2 Q. And the 91 physicians that</p> <p>3 were listed include Veerle Bergink, also</p> <p>4 an Icahn scientist in 562, right?</p> <p>5 A. If Shanna Swan or Veerle</p> <p>6 Bergink evaluated the literature as it</p> <p>7 relates to autism, prenatal use, and</p> <p>8 acetaminophen, I don't think they could</p> <p>9 reasonably conclude that it causes</p> <p>10 autism.</p> <p>11 Q. You know, that's why I used</p> <p>12 Exhibit 562. I showed you all the stuff</p> <p>13 that was evaluated by the consensus</p> <p>14 statement group.</p> <p>15 Remember all those tables,</p> <p>16 five tables? Do you remember that?</p> <p>17 A. Vaguely.</p> <p>18 Q. I didn't take you through</p> <p>19 that for my health. That was all the</p> <p>20 stuff that they reviewed and listed what</p> <p>21 they reviewed before coming up with a</p> <p>22 conclusion that there was a need for</p> <p>23 precautionary action regarding</p> <p>24 paracetamol use during pregnancy, right?</p>	<p>Page 621</p>

		Page 622	Page 624
1	MS. BROWN: Objection.		
2	Argumentative.		
3	THE WITNESS: Disagree with		
4	that conclusion.		
5	BY MR. WATTS:		
6	Q. Now, the difference between		
7	you and them is after your school came		
8	out with this press release, with this		
9	consensus statement, those folks looked		
10	at it and they weren't retained in		
11	litigation, right?		
12	MS. BROWN: Objection to the		
13	form of the question as false.		
14	THE WITNESS: I don't know		
15	if they were retained or not.		
16	They may have been retained for		
17	the plaintiffs.		
18	BY MR. WATTS:		
19	Q. Well, between the time that		
20	this consensus statement came out in 2018		
21	until almost five years later when you		
22	decided to go to work for Butler Snow,		
23	did you do one lick of work with respect		
24	to acetaminophen, one lick other than		
		Page 623	Page 625
1	have your name on a book chapter that you		
2	say you didn't write?		
3	MS. BROWN: Highly		
4	argumentative. I object.		
5	BY MR. WATTS:		
6	Q. Go ahead.		
7	A. I think I've made it clear		
8	that I did not start investigating the		
9	relationship between acetaminophen and		
10	autism, I did not find it plausible,		
11	until recently.		
12	Q. Did you ever tell		
13	Mr. Tillery that you didn't find his		
14	theory plausible? I didn't see an e-mail		
15	that said that.		
16	A. I think in the first e-mail		
17	that I sent to Shanna Swan, I reflected		
18	some skepticism but also agreed,		
19	nevertheless, to dig into the literature,		
20	because I was curious about the science.		
21	Q. Now, since the Butler Snow		
22	people have called you, your bills total		
23	\$82,250 as of a month ago. Do you know		
24	how much time you spent this month?		
1	A. I don't know how much time.		
2	Q. What is your best estimate?		
3	A. I don't want to guess.		
4	Q. Well, I mean, you've been		
5	here eight hours. How much time did you		
6	prepare this week?		
7	A. Several hours a day.		
8	Q. Yeah. You remember the		
9	supplemental thing. You've read all the		
10	deposition reports -- I mean all the		
11	expert reports, right?		
12	A. Yes.		
13	Q. And then you read all the		
14	rough transcripts of the depositions,		
15	right?		
16	A. I spent a lot of time, yes.		
17	Q. What's a lot of time?		
18	What's your best estimate?		
19	A. I don't want to make a best		
20	estimate.		
21	Q. Okay. Would you be willing		
22	to send me your supplemental bill for		
23	this time so we can have an accurate		
24	description of what you billed as of the		
1	date of the deposition?		
2	A. Sure --		
3	MS. BROWN: Counsel.		
4	THE WITNESS: I'm sure		
5	defense counsel will provide it to		
6	you.		
7	BY MR. WATTS:		
8	Q. Now, let me ask you this		
9	next thing, this caution against blaming		
10	mothers. Did you hear one word out of my		
11	mouth saying I blame the mother?		
12	A. No.		
13	Q. Now, if the mother is not		
14	warned about a risk, can she make an		
15	informed choice as to whether to take a		
16	pharmaceutical product or not?		
17	MS. BROWN: I object to the		
18	hypothetical.		
19	THE WITNESS: I'm not in the		
20	position of advising mothers		
21	whether to take medicine or not.		
22	BY MR. WATTS:		
23	Q. The label that mom gets when		
24	she goes to Walgreens or CVS or Walmart		

<p>1 doesn't say one word about autism, does 2 it? 3 MS. BROWN: Objection to the 4 form of the question. 5 THE WITNESS: I'm a child 6 psychiatrist. I don't prescribe 7 medicine to -- 8 MS. BROWN: Let him finish, 9 please. Let him finish. 10 BY MR. WATTS: 11 Q. Yeah, but you saw it doesn't 12 say anything about acetaminophen causing 13 autism, does it? 14 MS. BROWN: Objection to 15 form. Lacks foundation. 16 THE WITNESS: To my 17 knowledge, the label of 18 acetaminophen does not say it 19 causes autism. Rightfully so. 20 BY MR. WATTS: 21 Q. Okay. Do you know what the 22 label over in Europe says about the 23 relationship between acetaminophen use 24 and autism spectrum disorder?</p>	<p>Page 626</p> <p>1 time. 2 BY MR. WATTS: 3 Q. Go ahead. 4 A. Again, I don't find myself 5 in the position of advising moms. 6 Q. Okay. Well, you made the 7 comments about moms, so... 8 MS. BROWN: Counsel, I'll 9 give you the courtesy of a couple 10 more questions, but you're over 11 seven hours. 12 MR. WATTS: Well, I have the 13 same -- no, it's seven hours the 14 first part, then I get the same 15 time as you. That's what the 16 order said, but I'm not -- 17 MS. BROWN: Okay. Okay. 18 BY MR. WATTS: 19 Q. Let me just ask you, with 20 respect to whether something is causal or 21 not, does cigarette smoking cause cancer? 22 MS. BROWN: Objection to the 23 form. 24 THE WITNESS: I'm not here</p>
<p>1 MS. BROWN: Objection to the 2 form. 3 THE WITNESS: I'm not a 4 regulatory expert. I don't 5 prescribe medicine to pregnant 6 women, and I don't practice in 7 Europe. 8 BY MR. WATTS: 9 Q. Now, if a label says that 10 you should use this as judiciously as 11 possible given this risk, do you think 12 moms are just going to ignore that label? 13 A. Again, I'm not in a position 14 to judge moms. I'm not in a position to 15 evaluate labels. 16 Q. You would agree that there 17 is absolutely no basis to blame mom for 18 taking acetaminophen when she's not told 19 one word about acetaminophen risk of 20 autism, agreed? 21 MS. BROWN: I object to this 22 whole line of questioning as 23 lacking foundation. 24 And, Counsel, you are out of</p>	<p>Page 627</p> <p>1 to provide testimony on the 2 relationship between cigarette 3 smoking and cancer. 4 BY MR. WATTS: 5 Q. But assuming you were asked 6 in front of the trial, do you have an 7 opinion as to whether it causes cancer, 8 yes or no? 9 MS. BROWN: Asked and 10 answered. 11 THE WITNESS: I don't feel 12 comfortable providing an expert 13 opinion on that. 14 BY MR. WATTS: 15 Q. Okay. Fair enough. 16 With respect to 545. 17 MR. WATTS: Put it on the 18 screen. 19 BY MR. WATTS: 20 Q. And counsel wrote in 21 something about today and all that stuff, 22 and we'll have that. 23 I'm just curious. We've 24 been here for eight hours. Are you able</p>

<p style="text-align: right;">Page 630</p> <p>1 to tell me about the percentage of the 2 increased prevalence that is due to any 3 of the five factors that you talked 4 about?</p> <p>5 MS. BROWN: You asked that 6 nine hours ago. I object.</p> <p>7 THE WITNESS: So I am not 8 able, as I sit here, to isolate 9 these five factors and tell you 10 what percentage of a rate increase 11 it is.</p> <p>12 But we are able to look at 13 the rate increase and we are able 14 to see that the majority of that 15 increase is due to these 16 methodological factors.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Oh, and 12 percent of it is 19 because of younger age of diagnosis. 20 What other diagnosis rate increase are 21 you going to give to any one of these so 22 that we can add it up and see if it's 23 close to 100 percent or not?</p> <p>24 MS. BROWN: Asked and</p>	<p>1 with this litigation?</p> <p>2 MS. BROWN: I object to the 3 form as lacking foundation.</p> <p>4 THE WITNESS: The only -- 5 no, I don't know what his role 6 is --</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Do you know whether --</p> <p>9 MS. BROWN: Wait, wait, let 10 him finish, please.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Do you know whether 13 Mr. Tillery has even filed a single 14 lawsuit?</p> <p>15 A. I have no idea what 16 Mr. Tillery's role is.</p> <p>17 Q. Okay. So when she says the 18 plaintiffs' lawyers in this litigation, 19 in order to be in this litigation, you 20 have to file a single lawsuit, right?</p> <p>21 MS. BROWN: Objection to the 22 form.</p> <p>23 THE WITNESS: I have a sense 24 that you're arguing with --</p>
<p style="text-align: right;">Page 631</p> <p>1 answered like nine times now.</p> <p>2 THE WITNESS: Yeah, I think 3 I've answered that question. I am 4 not able, at this moment in time, 5 to mathematically model the rate 6 of increase per item.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Now, next-to-last issue. 9 She asked you whether the plaintiffs' 10 lawyers in this litigation approached 11 you. You understand that Mr. Tillery has 12 nothing to do with this litigation.</p> <p>13 A. I have no understanding 14 whatsoever of Mr. Tillery's role in this 15 litigation or not.</p> <p>16 Q. You are testifying in an MDL 17 proceeding in the Southern District of 18 New York; you know that, right?</p> <p>19 A. Yes.</p> <p>20 Q. And you know that 21 Mr. Tillery is not one of the co-leads, 22 is not on the plaintiffs' executive 23 committee, not on the Plaintiffs' 24 Steering Committee, has nothing to do</p>	<p>1 BY MR. WATTS:</p> <p>2 Q. Nope.</p> <p>3 A. -- Ms. Brown.</p> <p>4 Q. I'm not.</p> <p>5 A. So, I'm sorry, what's the 6 question?</p> <p>7 Q. So this idea that 8 plaintiffs' lawyers in this litigation 9 approached you. Did I approach you?</p> <p>10 A. No.</p> <p>11 Q. Did Ashley Keller approach 12 you?</p> <p>13 A. No.</p> <p>14 Q. Did Mark Lanier approach 15 you?</p> <p>16 A. No.</p> <p>17 Q. Did any members of the 18 plaintiffs' executive committee and the 19 MDL appointed by the court approach you?</p> <p>20 MS. BROWN: Objection. 21 Lacks foundation.</p> <p>22 THE WITNESS: No. I have no 23 idea.</p> <p>24 BY MR. WATTS:</p>

1 Q. Did any members of the  
 2 Plaintiffs' Steering Committee appointed  
 3 by the court approach you?

4 MS. BROWN: Same objection.

5 THE WITNESS: I have no  
 6 idea.

7 BY MR. WATTS:

8 Q. Okay. Now, this question  
 9 about your funding sources, do the  
 10 results of your scientific endeavors  
 11 relate to who funded them? You've done  
 12 no scientific research on the  
 13 relationship between acetaminophen and  
 14 autism outside of the litigation context  
 15 in this case; is that true?

16 MS. BROWN: Asked and  
 17 answered.

18 THE WITNESS: I have not  
 19 done research on the relationship  
 20 between acetaminophen and autism  
 21 outside of the context of this.

22 BY MR. WATTS:

23 Q. And in your CV, updated  
 24 however well it has been, it has grant

1 applications with respect to grants that  
 2 are ongoing right now, right?

3 A. Yes.

4 Q. Have you sought any funding  
 5 from any third party to do scientific  
 6 research with respect to the relationship  
 7 between acetaminophen and autism?

8 A. I have not myself, no.

9 MR. WATTS: Okay. That's  
 10 all my questions. Thank you.

11 MS. BROWN: Nothing further.  
 12 Thank you so much, Doctor.

13 THE VIDEOGRAPHER: The time  
 14 right now is 5:42 p.m. We are off  
 15 the record.

16 \*\*\*\*\*

17 (Excused.)

18 (Deposition concluded at  
 19 approximately 5:42 p.m.)

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1  
 2 CERTIFICATE  
 3  
 4

5 I HEREBY CERTIFY that the  
 6 witness was duly sworn by me and that the  
 7 deposition is a true record of the  
 8 testimony given by the witness.

9 It was requested before  
 10 completion of the deposition that the  
 11 witness, ALEX KOLEVZON, M.D., have the  
 12 opportunity to read and sign the  
 13 deposition transcript.

14 MICHELLE L. GRAY  
 15 A Registered Professional  
 16 Reporter, Certified Court  
 17 Reporter, Certified Realtime  
 18 Reporter and Notary Public  
 19 Dated: September 5, 2023

20 (The foregoing certification  
 21 of this transcript does not apply to any  
 22 reproduction of the same by any means,  
 23 unless under the direct control and/or  
 24 supervision of the certifying reporter.)

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1 INSTRUCTIONS TO WITNESS

2 DATE: September 5, 2023

3 Please read your deposition  
 4 over carefully and make any necessary  
 5 corrections. You should state the reason  
 6 in the appropriate space on the errata  
 7 sheet for any corrections that are made.

8 After doing so, please sign  
 9 the errata sheet and date it.

10 You are signing same subject  
 11 to the changes you have noted on the  
 12 errata sheet, which will be attached to  
 13 your deposition.

14 It is imperative that you  
 15 return the original errata sheet to the  
 16 deposing attorney within thirty (30) days  
 17 of receipt of the deposition transcript  
 18 by you. If you fail to do so, the  
 19 deposition transcript may be deemed to be  
 20 accurate and may be used in court.

21

22

23

24

<p>1                    E R R A T A</p> <p>2</p> <p>3</p> <p>4 PAGE LINE CHANGE</p> <p>5 _____</p> <p>6 REASON: _____</p> <p>7 _____</p> <p>8 REASON: _____</p> <p>9 _____</p> <p>10 REASON: _____</p> <p>11 _____</p> <p>12 REASON: _____</p> <p>13 _____</p> <p>14 REASON: _____</p> <p>15 _____</p> <p>16 REASON: _____</p> <p>17 _____</p> <p>18 REASON: _____</p> <p>19 _____</p> <p>20 REASON: _____</p> <p>21 _____</p> <p>22 REASON: _____</p> <p>23 _____</p> <p>24 REASON: _____</p>	<p>Page 638</p> <p>1                    LAWYER'S NOTES</p> <p>2 PAGE LINE</p> <p>3 _____</p> <p>4 _____</p> <p>5 _____</p> <p>6 _____</p> <p>7 _____</p> <p>8 _____</p> <p>9 _____</p> <p>10 _____</p> <p>11 _____</p> <p>12 _____</p> <p>13 _____</p> <p>14 _____</p> <p>15 _____</p> <p>16 _____</p> <p>17 _____</p> <p>18 _____</p> <p>19 _____</p> <p>20 _____</p> <p>21 _____</p> <p>22 _____</p> <p>23 _____</p> <p>24 _____</p>
<p>Page 639</p> <p>1</p> <p>2                    ACKNOWLEDGMENT OF DEPONENT</p> <p>3</p> <p>4                    I, _____, do</p> <p>5 hereby certify that I have read the</p> <p>6 foregoing pages, 1 - 640, and that the</p> <p>7 same is a correct transcription of the</p> <p>8 answers given by me to the questions</p> <p>9 therein propounded, except for the</p> <p>10 corrections or changes in form or</p> <p>11 substance, if any, noted in the attached</p> <p>12 Errata Sheet.</p> <p>13</p> <p>14</p> <p>15 _____</p> <p>16                    ALEX KOLEVZON, M.D.                    DATE</p> <p>17</p> <p>18</p> <p>19 Subscribed and sworn</p> <p>20 to before me this</p> <p>21 day of _____, 20 _____. My commission expires: _____</p> <p>22</p> <p>23 Notary Public</p> <p>24</p>	

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